

instruction  
manual  
for the  
**mi26**  
combined  
machine

Blank Page Without Content



**instruction  
manual  
for the  
m106  
combined  
machine  
its tools  
and accessories**

Blank Page Without Content



Congratulations,

you now own a MIA 6 combined machine!

The first thing you have to do is send the Warranty Card which is in the envelope your dealer gave you to Zinken Italiana S.p.A., 20090 Trezzano s/Naviglio, Italy.

The same envelope contains the spare parts catalog for the MIA 6 which you can use to order any spare parts you may need (we hope this need never arises!).

Keep your Warranty Certificate for the entire duration of the warranty period and show it to our service technicians, otherwise they will not be able to do the repairs.

The combined woodworking machine which you have purchased has been designed and built after years of study and experience and with the collaboration of do-it-yourself experts.

This machine is very compact and complete; it is equipped with the latest devices which make it easy to use and maintain and guarantee precision work.

Its cast aluminum construction makes the MIA 6 light and sturdy.

Since it occupies very little space and is easy to carry, this machine has been a success with hobbyists the world over.

This manual has been designed with beginners in mind so some of the explanations may seem obvious to the more expert.

Please read this manual carefully and follow the instructions in it; they are actually quite simple even though sometimes they may seem complicated.

The time spent in these preliminaries will enable you to get the most out of your "little" MIA 6.

Send us the photos of the things you've made with your MIA 6; we'll be glad to publish them, together with your name, in the leading magazines in this sector. And there'll also be a big surprise for you.

Now let's get acquainted with your new machine and best wishes from

ZINKEN ITALIANA S.p.A.



# Contents

Features of the MIA 6 . . . . .	Page	6
Specifications . . . . .	"	7
Safety . . . . .	"	8
Assembling your MIA 6 . . . . .	"	9
Using the machine . . . . .	"	10
- Surfacing planer . . . . .	"	12
- Thicknessing planer . . . . .	"	16
- Circular saw . . . . .	"	19
- Spindle moulder . . . . .	"	23
- Borer-mortiser . . . . .	"	31
- Crosscutting table . . . . .	"	33
Belt replacement . . . . .	"	34
Base . . . . .	"	37
Special safety devices . . . . .	"	38
Useful advice and maintenance . . . . .	"	40



# Features of the MIA 6

Your MIA 6 has been designed and built using the most advanced technologies. Just one handwheel for micrometric adjustments (with graduated scale) of the thickening planer table, the borer-mortiser table and the moulder spindle.

As you can see in **Figure 1**, elevating handwheels A and B which raise and lower the tables and tools are mounted on a shaft which runs all the way through the machine.

When this shaft rotates it drives the gear mounted on flange (C) for raising and lowering the thickening planer table.

In fact you will notice that when you make an adjustment on the planer or the spindle moulder the thickening planer table - and the mortiser table which is anchored to it - will move too.

The main locking lever (D) blocks the thickening table elevating mechanism, this it will have to be loosened before any adjustments can be made and tightened before you start working.

When the spindle moulder control knob (E) is in the **ON** position the spring-operated pin allows the moulder spindle to be raised or lowered. Both the motor and spindle must be running.

When the desired position has been reached, tighten main locking lever (D). **NEVER FORCE** the elevating handwheels; **always make sure** that you have carried out all the necessary operations described in detail for each tool before using them.

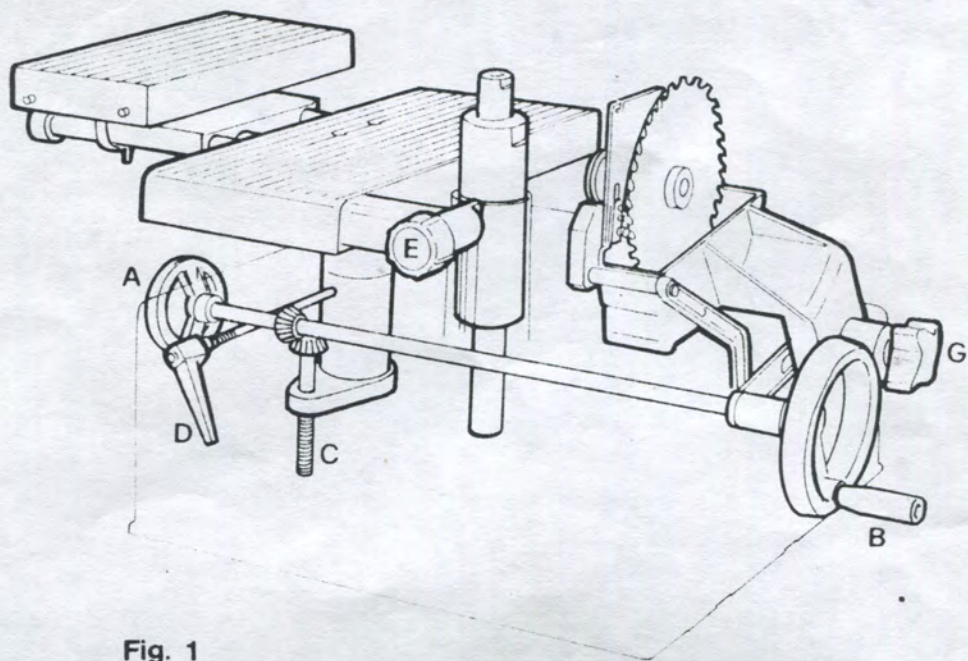


Fig. 1



# Specifications

## Construction

Cast aluminum bed with precision steel parts; ribbed and ground work tables. All moving parts are mounted on prelubricated sealed ball bearings.

## Motor

Single-phase, 220 V, 50 Hz; input 1 HP, output 3/4 HP.  
Flat and inextensible drive belts; all the power from the motor is transmitted to just the operation set on the selector lever.

110 V.  
60 Hz.

## Dimensions

Overall dimensions: 800 × 550 × 350 mm  
Table: 490 × 510 mm

## Weight

Net weight: 48 kg  
Shipping weight: 68 kg  
Shipping weight with base: 77 kg



# Safety

Woodworking tools rotate at high speed and this causes many accidents.

We have done our best to make the MIA 6 a very safe machine; the transmission is completely enclosed in the bed and the dangerous tools are protected by adequate guards.

The operator must always use these guards; their use is explained under each operation. The machine must also be connected to a good ground by means of the ground conductor in the supply cable. Obviously the operator must shut off the machine before changing the tools or cleaning it.

Furthermore, the operator should wear the right kind of clothes: never even come near the machine with a loose tie or unbuttoned cuffs because they might get caught in the tools.

Special care must be used when the workpiece is small: never hold it directly in your hands, always push it or guide it with bigger strips.



# Assembling your MIA 6

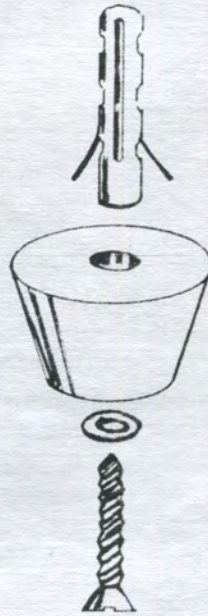
The machine is shipped in a cardboard box.

The guards and some other parts are shipped disassembled. The instructions for installing them are given in the chapter on each operation.

The following wrenches are also provided:

- For the circular saw: two 2 mm wrenches and one 4 mm Allen wrench
- for replacing the belts: one hook
- for the planer: one 3 mm and one 6 mm Allen wrench
- for the spindle moulder: one 22 mm and one 17 mm wrench

Together with the wrenches you will also find the rubber feet for the machine and the screws for mounting them.





# Operations

The selector lever on the MIA 6 is used to select the tool you want to use; the other operations are automatically excluded. Just shift the lever to the desired symbol: the planer-borer, the spindle moulder and the circular saw (from left to right).

To select an operation, in the slot pull the selector lever slightly out

To select an operation, pull the selector lever slightly out and place it in the slot under the desired symbol.

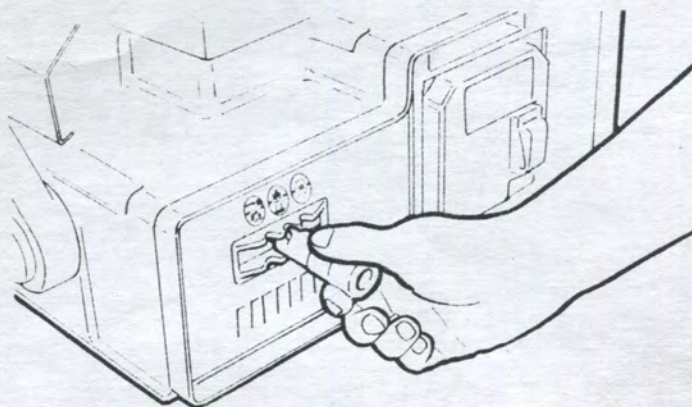


Fig. 2

REMEMBER THAT THE MOTOR MUST BE TURNED OFF EACH TIME YOU SELECT AN OPERATION. Before you shift the selector lever to a new operation, turn the motor off and wait until the tool has stopped rotating. **Sometimes the selector may not "engage" properly; if this happens, rotate the tool you want to use slightly by hand or turn the motor on and off again.** Now it should engage properly. During the first hours of operation, some of the tools which is not being used may rotate slowly together with the tool you are using. This is quite normal: the prelubricated sealed bearings have to be run in. This problem will gradually disappear in a short time.



# Operations

## Surfacing planer

Planing width 155 mm; two knives 155 × 16 × 3  
Overall work table length 485 mm  
Speed 5700 rpm  
Cutterblock with prismatic gib provided with springs for easy positioning  
Adjustable tilting fence (planer and saw)  
Hinged guard

## Thicknessing planer

Planing width 153 mm  
Maximum workpiece thickness 73 mm  
Automatic feed rate 0 or 5 m/min  
Speed 5700 rpm  
Guard over cutter acts as shavings chute  
Anti-kickback fingers  
Cut limiter 2.5 mm  
Side limiter  
Feed roll pressure adjusting screws

## Spindle moulder

Spindle rise and fall 65 mm  
Maximum cutter diameter 55 mm  
Spindle speed 9500 rpm  
Collets for 6-6.3-8-9.5 mm cutter shanks and extension for solid wing cutters can be mounted  
Metal guard

## Circular saw

Blade diameter 160 mm; center hole 20 mm  
Speed 5000 rpm  
Depth of cut adjustable from 0 to 53 mm  
Self-adjusting riving knife  
Adjusting riving knife  
Adjustable tilting fence (planer and saw)  
Double flanged guard on riving knife (can be removed when blade is completely retracted)

## Borer-mortiser

Chuck holds bits from 1 to 13 mm  
Table equipped with stops provides both longitudinal and cross travel on ground rods  
Maximum longitudinal travel 85 mm  
Maximum cross travel 50 mm  
Maximum distance from table to bit axis 60 mm  
Holddown device

## Crosscutting table

Can be used with circular saw and spindle moulder  
Maximum travel with either tool 240 mm  
Equipped with miter fence  
Adjustable holddown device



# Surfacing planer

Select this operation by pulling the selector lever slightly out and shifting it to the position shown in **Figure 3**.

**THE MOTOR MUST BE TURNED OFF AND THE TOOLS MUST HAVE STOPPED ROTATING**

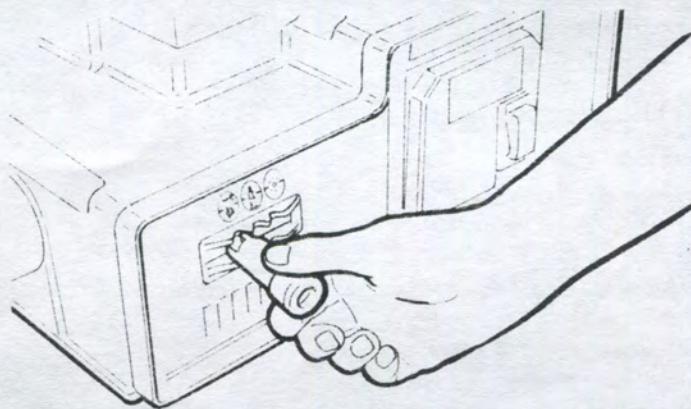


Fig. 3

The surfacing planer is used to smooth wood surfaces. The tool consists of a cylinder with two knives mounted lengthwise 180° apart. The depth of cut can be set by adjusting the height of one of the tables (A); the other table (B) is fixed (**Figure 4**).

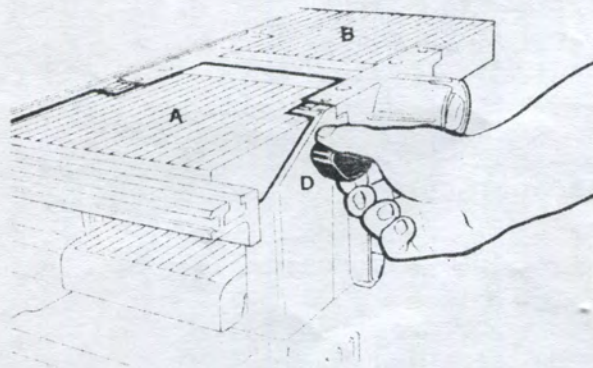


Fig. 4

Turn elevating knob (D) clockwise to raise table (A) and counterclockwise to lower it (**Figure 4**). Table (A) can be locked in place by means of the table clamping knob shown in **Figure 5**.



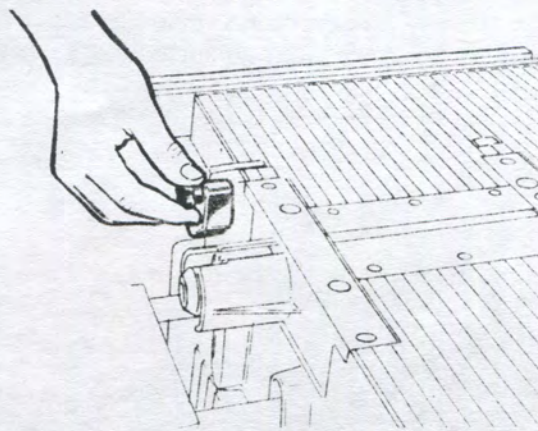


Fig. 5

Table (B) is used to position the knives: they must be level with this table. Lowering or raising table (A) increases or decreases the depth of cut, the amount of stock removed with each pass.

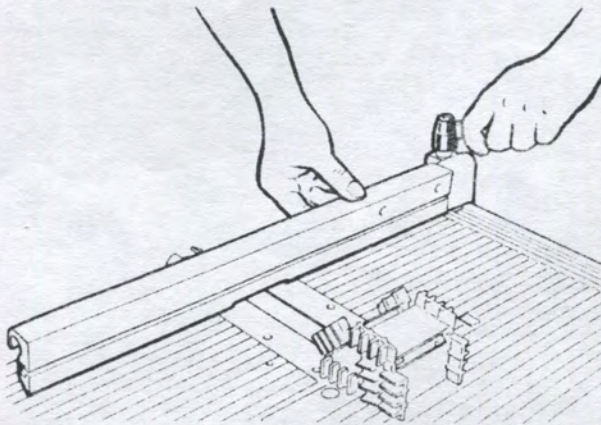


Fig. 6

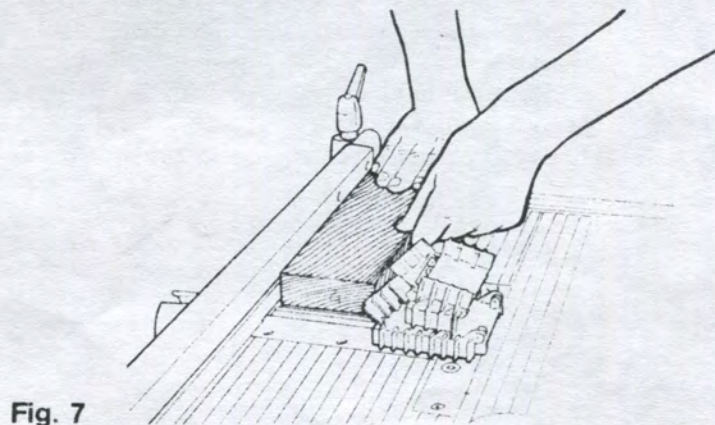


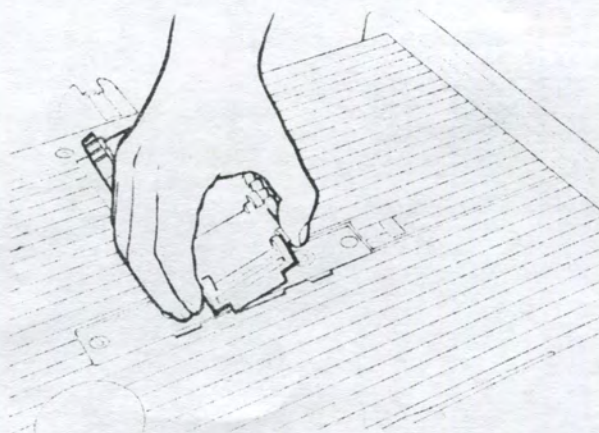
Fig. 7

The fence is used to guide the workpiece during planing and it can be tilted to cut surfaces at different angles (**Figure 6**).

The hinged guard must be used to cover that part of the planer head which is not being used so the operator's hands will be protected (**Figure 7**).



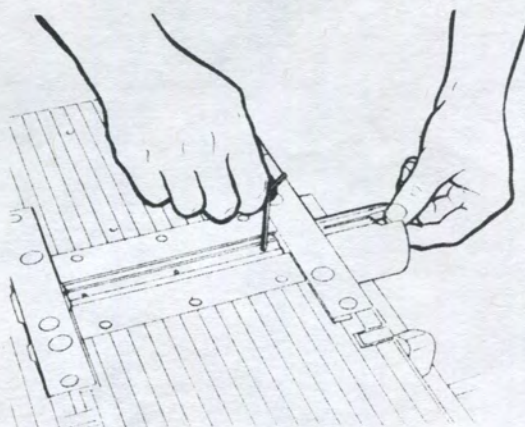
To mount the hinged guard, insert the last (and smallest) section in the appropriate slot on the machine table (**Figure 8**).



**Fig. 8**

The drawings below show how to remove the planer knives for sharpening or replacement.

**Loosen the knife clamping screws three turns at the most as in Figure 9 (do not remove them).**



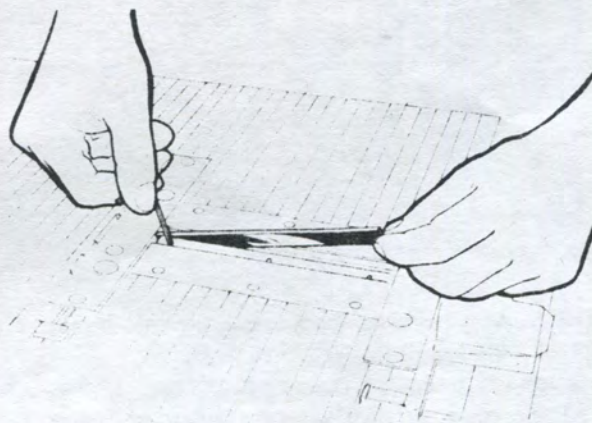
**Fig. 9**

Once the clamping screws have been loosened, the spring located underneath the knives will make them spring out of the cutterblock.

If necessary, push the prismatic gib down so it will be easier for the knife to come up.

Mount the new knife as soon as the old one has been removed (**Figure 10**).

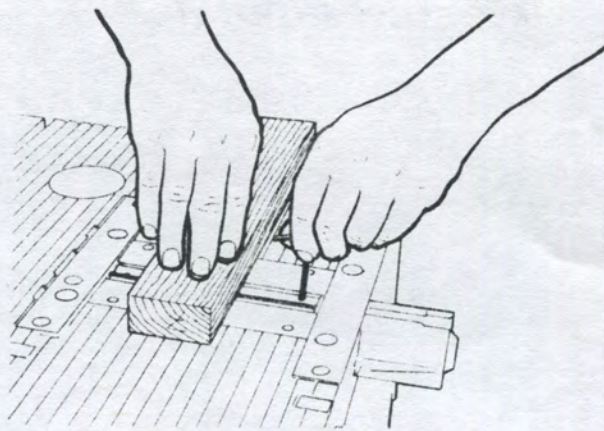
**CAUTION!** Never run the cutterblock without the knives.



**Fig. 10**

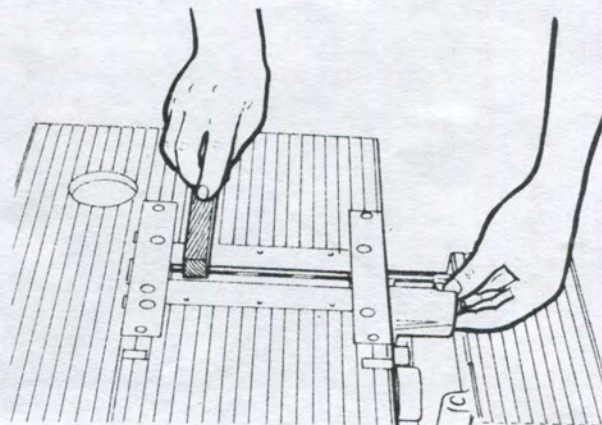


Follow the same procedure to remove the other knife.  
For safety's sake, extreme care must be used in mounting and securing the knives.  
When mounting new or sharpened knives, insert the knife in the cutter-block (it should project 1.1 mm beyond the prismatic gib) and tighten the clamping screws (**Figure 11**).

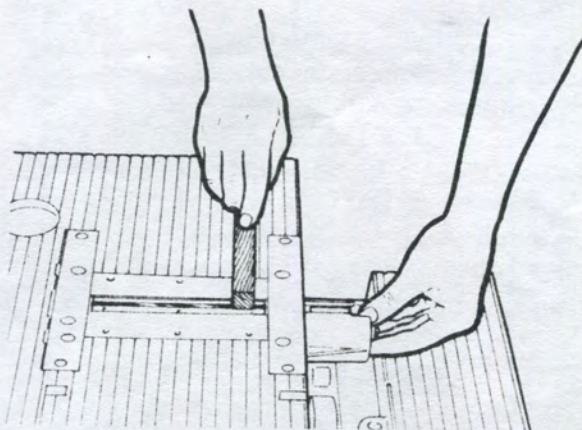


**Fig. 11**

Use a wooden straight edge to check the position of the knives. With the straight edge resting on table (B), turn the planer head spindle: the blades should barely graze the straight edge (**Figures 13**).



**Fig. 12**



**Fig. 13**



# Thicknessing planer

Select this operation by pulling the selector lever slightly out and shifting it to the position shown in Figure 14.

**THE MOTOR MUST BE TURNED OFF AND THE TOOLS MUST HAVE STOPPED ROTATING**

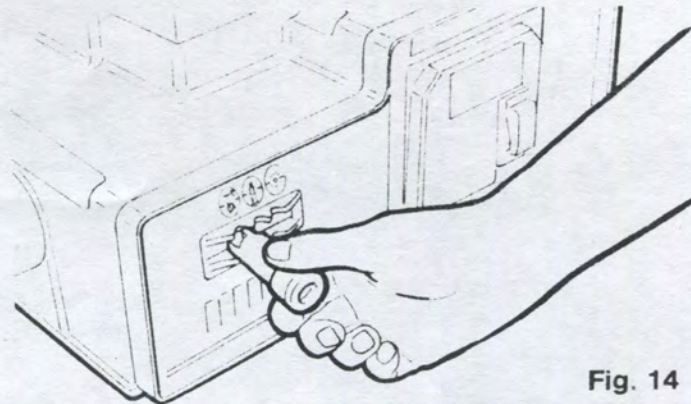


Fig. 14

To prepare the machine for thicknessing, the guard - which also acts as a shavings chute - must be mounted over the cutterblock. Insert the tab in the appropriate slot on table (B) and tighten the clamping screw (Figure 15).

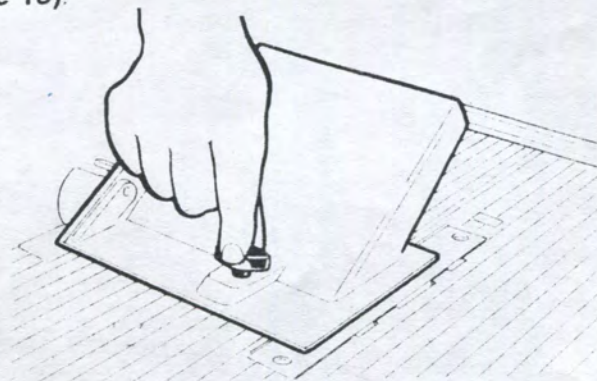


Fig. 15

Besides smoothing the surface of a board, the thicknessing planer also reduces its thickness. The board travels along the table and under the cutterblock; the distance between the table and the knives is adjustable.

Furthermore, two feed rolls (one of them is grooved) feed the workpiece at 5 meters/minute. The lever for turning on the automatic feed is shown in Figure 16: THE MOTOR MUST BE RUBBING WHEN YOU OPERATE THIS LEVER. Turn the automatic feed off when you have finished planing to avoid unnecessary wear on the drive when the machine is being used for other operations.

Both faces of the stock must be surfaced before they can be planed on the thicknesser.

If the stock to be cut on the thicknessing planer is very irregular always plane the thickest part first.

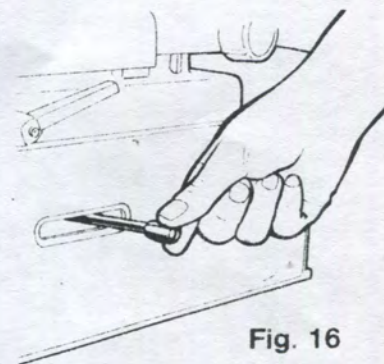


Fig. 16



The height of the thickener table can be adjusted by turning the handwheel (**Figure 17**) and it can be read directly on the graduated scale (**Figure 18**).

**NOTE:** If the pointer (**Figure 18**) does not give the correct reading it can be adjusted by loosening the screws that anchor it to the thickener table.

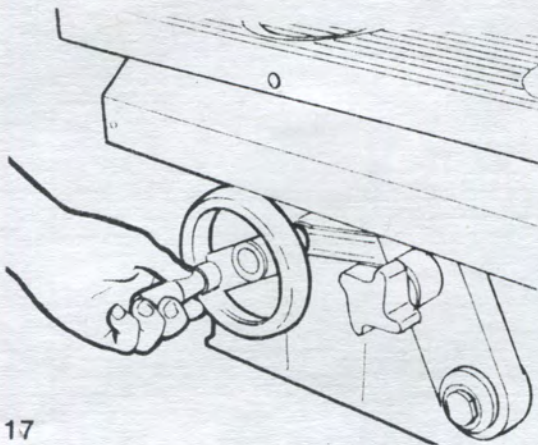


Fig. 17

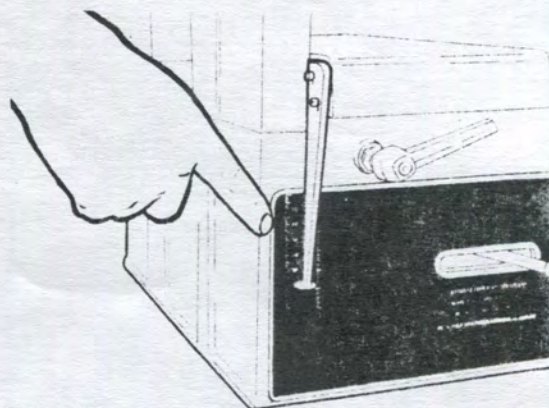


Fig. 18

Make sure that the moulder control knob (**Figure 19**) is in the OFF position.

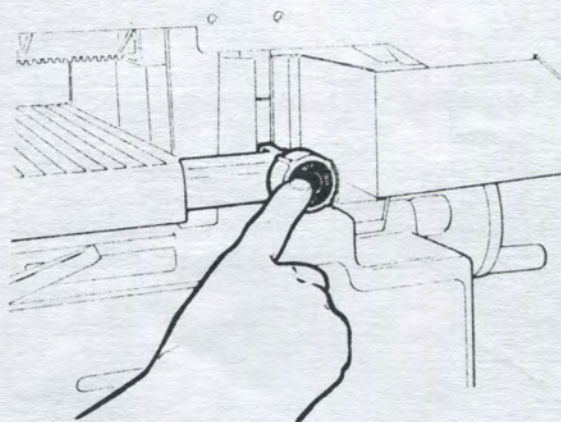


Fig. 19

and that the main locking lever has been loosened (**Figure 20**).

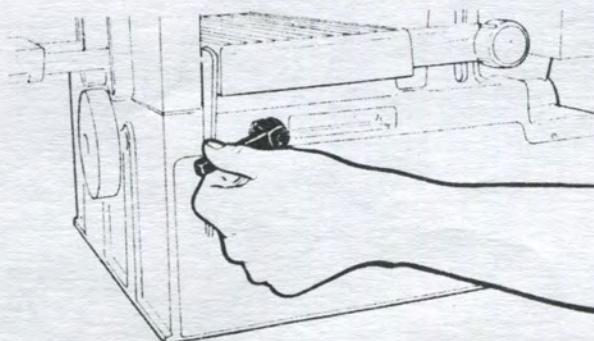
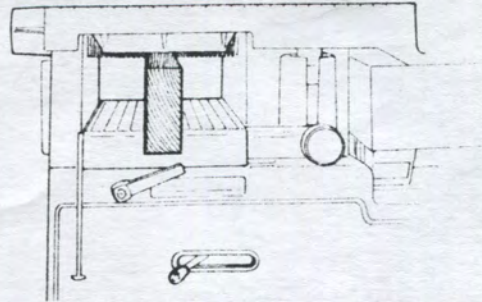


Fig. 20



Before feeding the stock under the anti-kickback fingers (which will not prevent the piece from entering the planer) tighten the main locking lever (**Figure 21**).

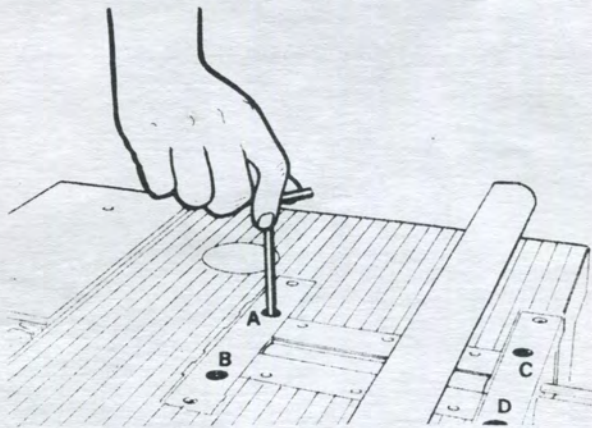


**Fig. 21**

For a better finish, do not remove more than 2 mm of stock with each pass.

The thickening planer is equipped with a cut limiter so maximum stock removal in one pass is 2.5 mm.

If the feed rolls are too tight on either side of the workpiece, turn the adjusting screws to obtain the correct pressure (**Figure 22**).



**Fig. 22**



# Circular saw

Select this operation by pulling the selector lever slightly out and shifting it to the position shown in **Figure 23**.

**THE MOTOR MUST BE TURNED OFF AND THE TOOLS MUST HAVE STOPPED ROTATING**

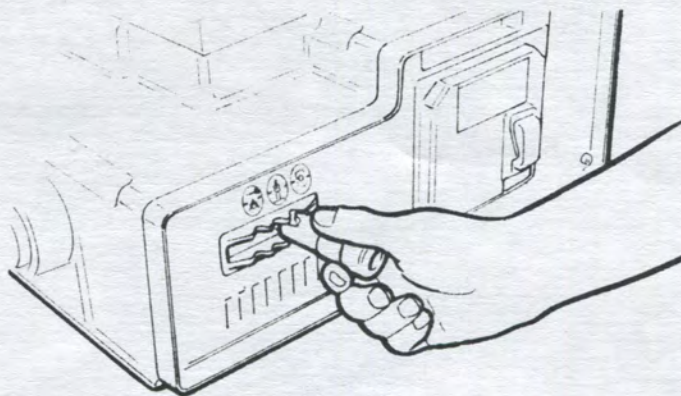


Fig. 23

This tool consists of a circular plate with teeth along the rim. It is thicker at the rim than in the center to prevent binding. The blades used on the MIA 6 have a 20 mm center hole and the maximum diameter is 160 mm. The steel blade mounted on the MIA 6 can be replaced with blades made from a different material and with a different number of teeth if the type of wood and work make this necessary.

The maximum depth of cut is 53 mm.

To raise the blade first loosen the blade clamping lever (**Figure 24**) then lift the blade arm to the desired height (**Figure 25**). Now tighten the blade clamping knob.

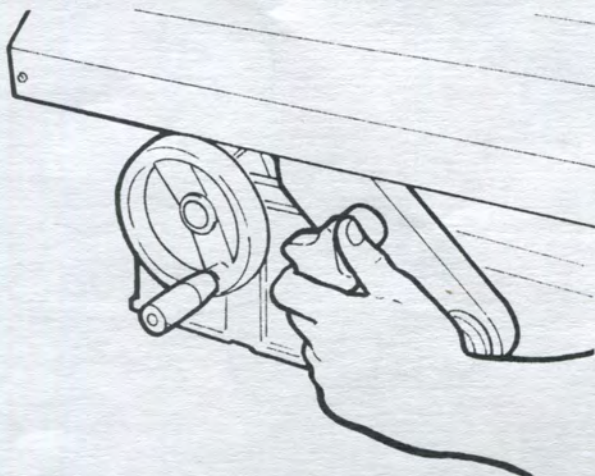


Fig. 24

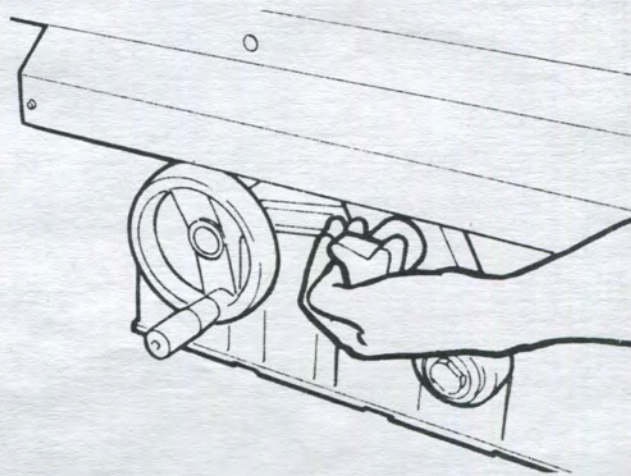
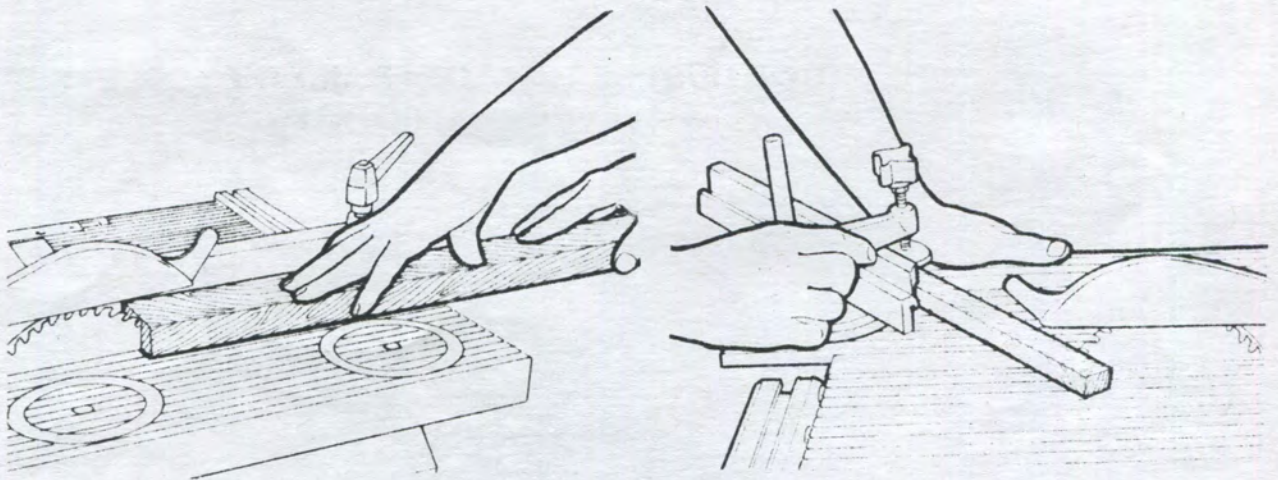


Fig. 25

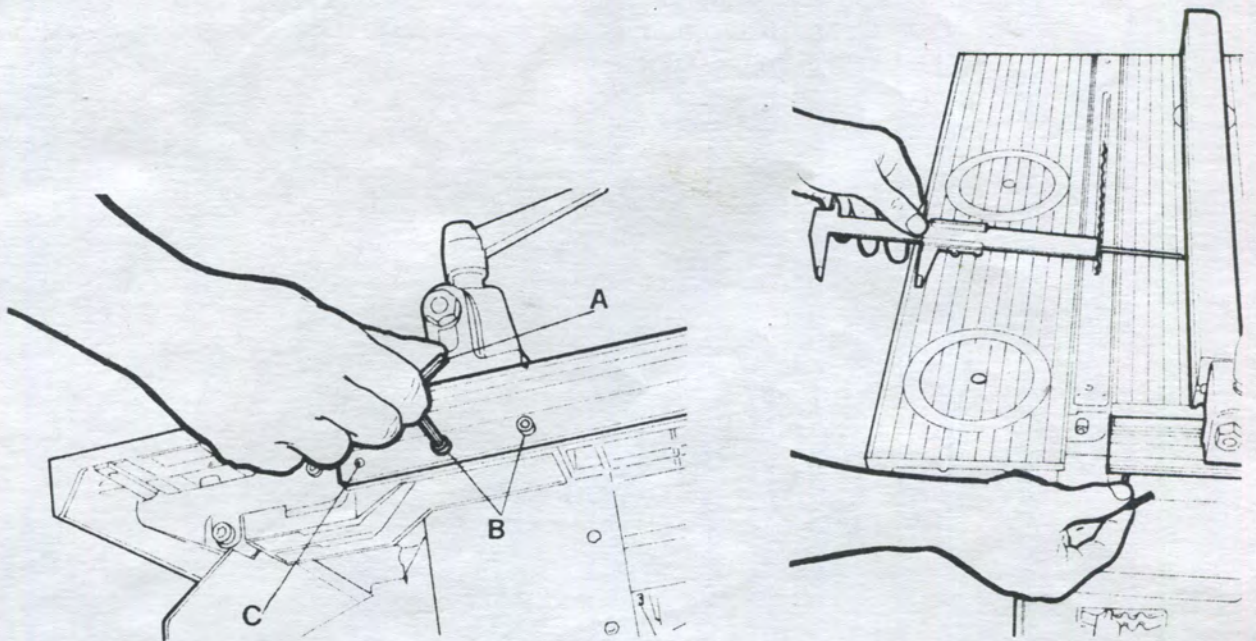


The tilting fence can be moved laterally if you want to make a series of parallel cuts. The miter fence with its holddown device will let you make very precise straight or miter cuts (**Figures 26-27**).



**Fig. 26**

If the fence is not perfectly parallel to the blade adjust it as follows: loosen fence locking screws (B), then use Allen wrench (A) to screw adjusting screw (C) in or out until the fence is parallel to the blade. Measure this distance as shown in **Figure 29**. Tighten locking screws (B) afterwards.





For safety's sake, always mount the double flanged guard on the riving knife before you use the saw. Slip the bolt through the mounting holes and tighten the butterfly nut (Figures 30-31).

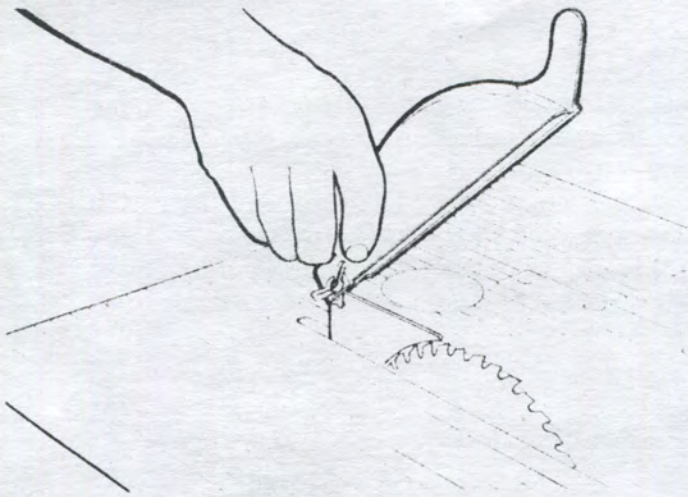


Fig. 30

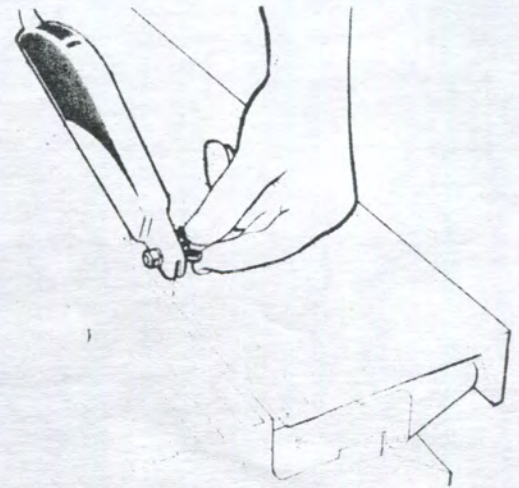


Fig. 31

If the saw drive belt slips the blade will tend to stop. If this happens adjust the belt tensioning roller mounted on the saw arm so that presses harder against the drive belt. (Figure 32).

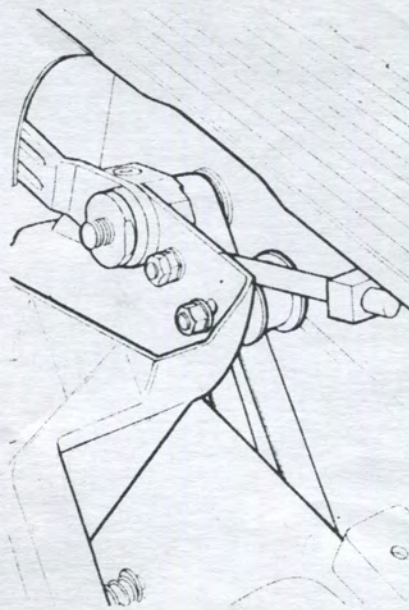


Fig. 32



# Installing and removing saw blades

To remove the circular saw blade lower it all the way. Then remove the two Allen screws which anchor the crosscutting table to its supports (**Figure 33**) and tilt the table outwards.

Use the two 32 mm wrenches supplied with the machine to loosen the arbor nut **by turning it clockwise** as shown in **Figure 34**.

Return the crosscutting table to its original position perpendicular to the blade and parallel to the fixed table and tighten the two Allen screws which anchor it.

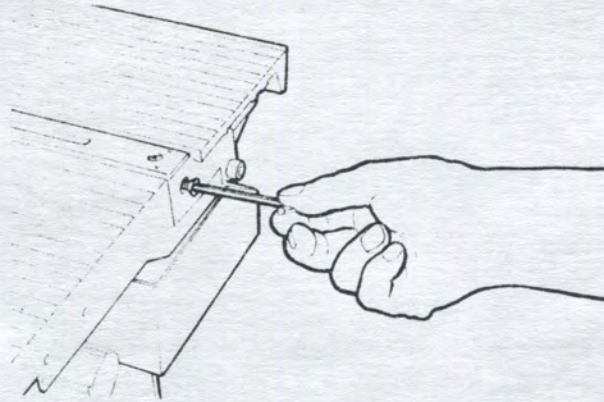


Fig. 33



Fig. 34



# Spindle moulder

Select this operation by pulling the selector lever slightly out and shifting it to the position shown in **Figure 35**.

**THE MOTOR MUST BE TURNED OFF AND THE TOOLS MUST HAVE STOPPED ROTATING**

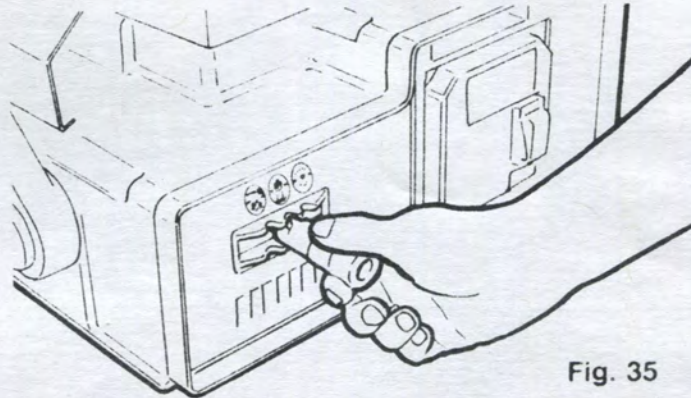


Fig. 35

The machine is delivered with the spindle completely retracted. Before raising the spindle, make sure that the main locking lever has been loosened (**Figure 36**).

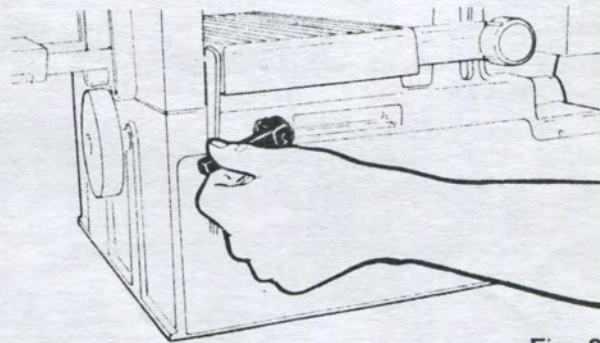


Fig. 36

Turn the spindle moulder control knob to the ON position and **turn on the motor (Figure 37)**.

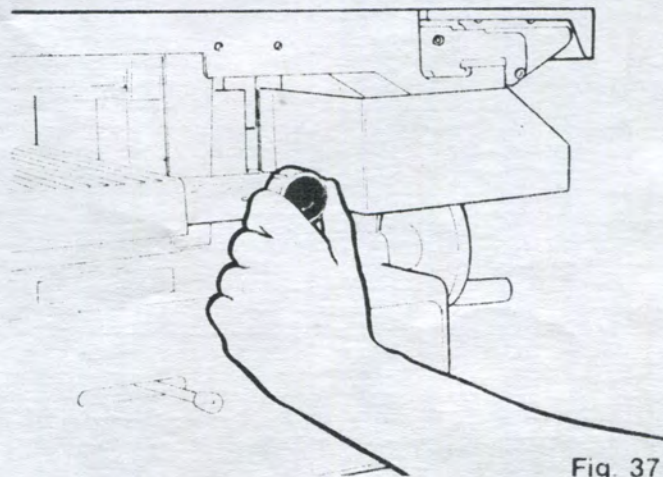


Fig. 37



If the spindle has to be raised or lowered this can only be done when the spindle is running (**motor on**).

Turn the elevating handwheel counterclockwise (**Figure 38**) to raise the spindle to the desired height and lock it in place by means of the main locking lever (**Figure 39**).

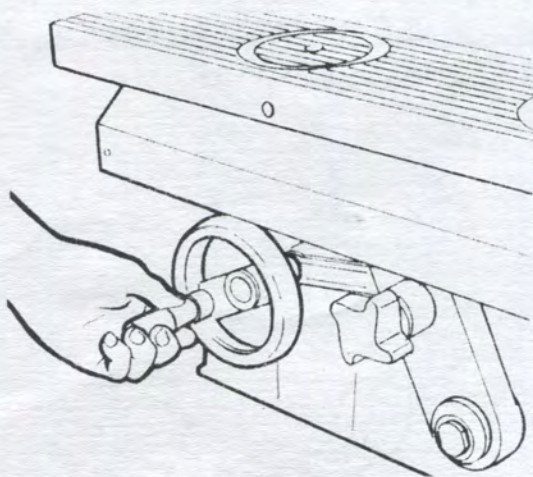


Fig. 38

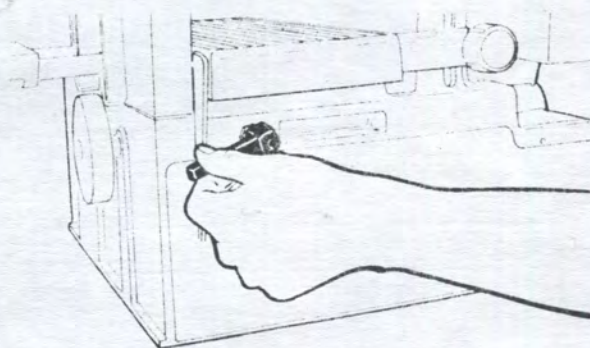


Fig. 39

To lower the spindle, loosen the main locking lever and turn the handwheel clockwise the spindle must be running (**motor on**).

When the spindle is completely retracted, turn the spindle moulder control knob to the OFF position.

Mount the guide rods for the red guard on the aluminum guard support and clamp it to the table with the clamping knobs provided (**Figure 40**). The adjustable fence plates will also be mounted on this guard (**Figure 41**).

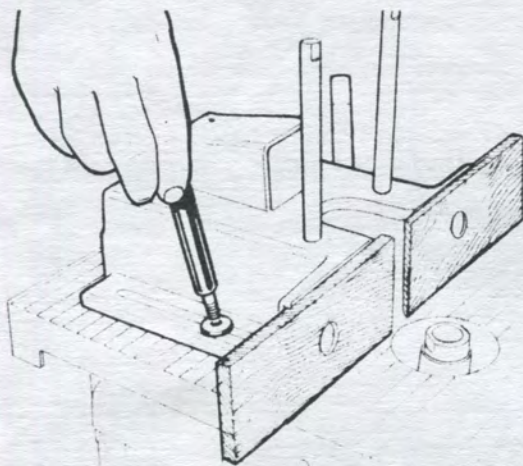


Fig. 40

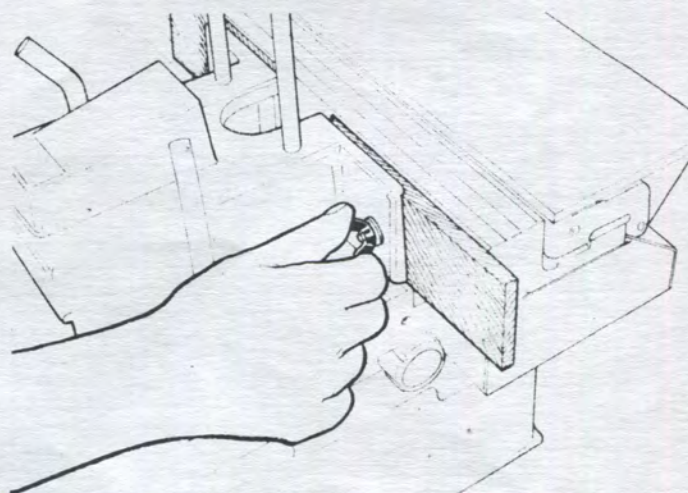


Fig. 41

The spindle rotates at very high speed (9500 rpm) so it can be very dangerous. Therefore the red guard must always be used. **Figure 42** shows how to mount it on the vertical guide rods on the guard support.



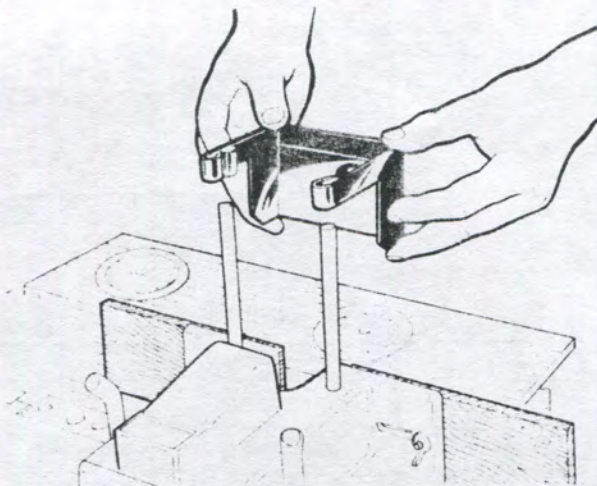


Fig. 42

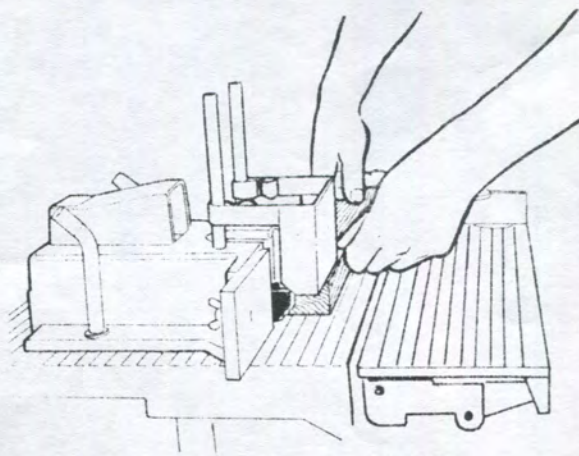


Fig. 43

As with the circular saw and the surfacing planer, the stock has to be pushed gently against the rotating tool, while one side of the work slides along the fence (**Figure 43**).

The spindle moulder is used to cut mouldings, grooves, tongues, etc. in boards which have already been planed and brought to the desired dimensions. These different types of operations can be performed by using different types of profile tools. There are variously shaped end mills with 6-6.3-8-9.5 mm diameter shanks which can be mounted on the spindle by means of the collet and clamped in place using the two wrenches supplied with the machine (**Figures 44-45**).

You can also use the solid wing cutters which should be mounted on the spindle extension and tightened with the wrenches (**Figures 46-375**).

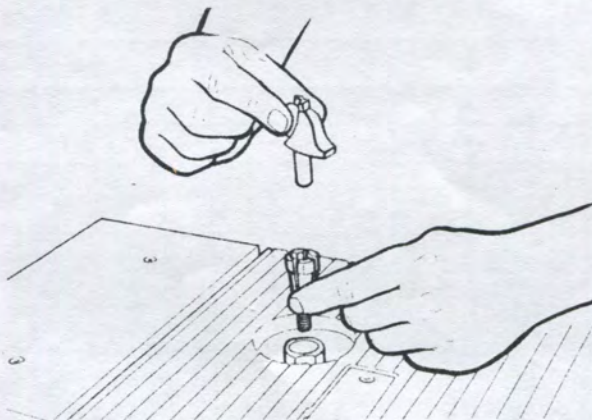


Fig. 44

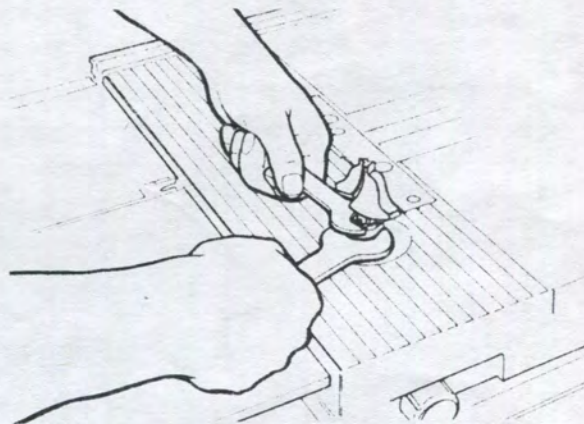


Fig. 45

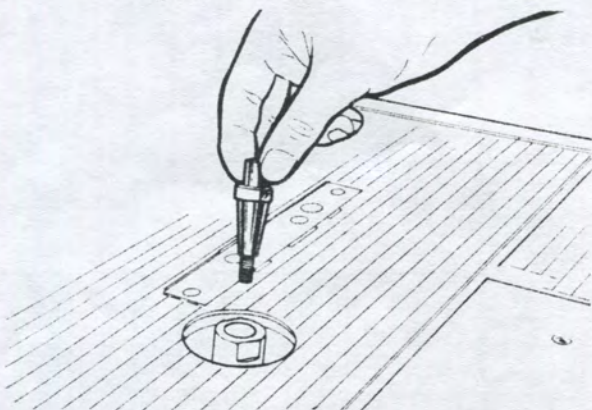


Fig. 46

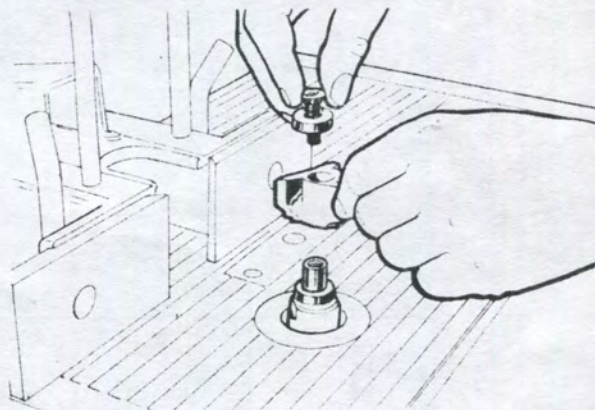


Fig. 47

**NOTE:** Make sure that spindle is clean before mounting the tools.



The spindle moulder can be used to cut many different shapes: tenons, blind and through dovetail joints, window and door mouldings, tongue and grooving for matchboards, etc. All you have to do is select the tool with the right profile and set up the fence and tool height properly.





















	Collet chucks for shank cutters	Art. 390 Ø 6 mm Art. 391 Ø 6,35 mm Art. 392 Ø 8 mm Art. 393 Ø 9,5 mm
--	---------------------------------	---

## CUTTERS H 40 SHANK 6 mm

**\* cutters contained  
in the box  
available  
also with shank  
Ø 6,35 (1/4")**

T.P.	Ø	r./gr.	HSS			TCT			T.P.	Ø	r./gr.	HSS			TCT		
			h.	Art.		h.	Art.					h.	Art.		h.	Art.	
1/40 	3		10	51	*	4	111		3/40 	8	7°	12	70	*			
	4		13	52	*	8	112			11	8°	15	71	*	15	130	
	5		18	53	*	10	113			14	8°	17	72	*	15	131	
	6					12	114										
	7					12	115										
2/40 	6		18	54	*				4/40 	12	3°	18	73	*	15	132	
	7		18	55	*					15	5°	18	74	*	15	133	
	8		18	56	*	15	116				32°				15	134	*
	9		18	57	*	15	117										
	10		18	58	*	15	118		5/40 								
	11		18	59	*	15	119			15	22,5°	18	75	*	15	135	
	12		18	60	*	15	120			16	45°	18	76		15	136	
	13		18	61	*	15	121										
	14		18	62	*	15	122										
	15		18	63	*	15	123										
	16		18	64	*	15	124										
	17		18	65	*	15	125										
	18		18	66	*	18	126										
	19		18	67	*	18	127										
	20		18	68	*	18	128										
2-S/40 									6/40 	6	3	18	77	*			
										8	4	18	78	*	15	137	
2-S/40 	17,5		11	69	*	11	129			10	5	18	79	*			
										12	6	18	80	*	15	138	
										14	7	18	81	*			
										16	8	18	82	*			








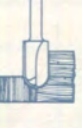


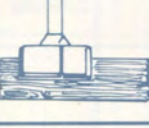



T.P.	Ø	r./gr.	HSS			TCT			T.P.	Ø	r./gr.	HSS			TCT		
			h.	Art.		h.	Art.					h.	Art.		h.	Art.	
6-S/40 	11 13 15	3 4 5	9 9 9	83 84 85	* * *	9	139		S/1/40 	12	6	12+6	102	*			
6-S/C-40 	23	5	12			12	140		S/2/40 	12		12+7	103	*			
7/40 	14 16 18	4 5 6	11 12 14	86 87 88	* * *	10	141		N. 	15 19					15 15	147 148	*
7-S/40 	13 15 17	4 5 6	10 10 12	89 90 91	* * *	10	142		N/C1 	21-30	90°				8/4	149	
7-S/C-40 	23	5				12	143		C 	13 19					15 15	150 151	*
8/40 	13 18 22	2+2 3+3 4+4	11 12 16	92 93 94	* * *	12	144		CS 	19-24	45°				15	152	
8-S/40 	18 22	3+3 4+4	12	95	*	12 18	145		C2S 	13-26	32°				13	153	
8-S/C-40 	25	3+3				12	146		R 	6 6					15 20	154 155	*
9/40 	12 13 15	3 4 5	12 16 18	96 97 98	* * *				G1 	6 6		104	*		15 20	156 157	*
DD/40 	10/6 14/8 16/8		16/6 10/7 10/6	99 100 101	* * *				G2 	6 8	15+15	105	*		15+15	158	*



# CUTTERS H 50 shank 9,5 mm (3/8")

\* cutters contained in the box

T.P.	Ø	r./gr.	HSS			TCT			Ø	r./gr.	HSS			TCT		
			h.	Art.		h.	Art.				h.	Art.		h.	Art.	
	2/50	8	25	167	*				18		25	177	*	25	222	
		9	25	168	*				19		25	178	*	25	223	
		10	25	169	*	25	214	35	20		25	179	*	25	224	35
		11	25	170	*	25	215		21		25			25	225	
		12	25	171	*	25	216	35	22	25	180	*		25	226	35
		13	25	172	*	25	217		23					25	227	
		14	25	173	*	25	218	35	24	25	181	*		25	228	
		15	25	174	*	25	219		25	25	182	*		25	229	35
		16	25	175	*	25	220	35	30	25	183	*		25	230	35
		17	25	176	*	25	221									

T.P.	Ø	r./gr.	HSS			TCT			T.P.	Ø	r./gr.	HSS			TCT		
			h.	Art.		h.	Art.					h.	Art.		h.	Art.	
	3/50									8/50							
		17		20	184	*					27	r.5+5	21	200	*		
		20		20	185	*					31	r.6+6	23	201	*		
	4/50										35	r.7+7	25	202	*		
		27	-75°	35	187	*					39	r.8+8	27	203	*		
		34	-60°	25	188	*				9/50							
	6/50										20	r. 6	20	204	*		
		27		35	187	*					23	r.7,5	23	205	*		
		34	-60°	25	188	*					29	r.10	29	206	*		
		38	-45°	20	189	*											
										DD/50							
	6-S/50										18-12		6-18	207	*		
		26	7,5				14	231			20-14		6-19	208	*		
											22-16		6-19	209	*		
										PL/50							
	7/50										40		14	210	*		
		22	r. 7	13	195	*											
		24	r. 8	16	196	*											
		27	r. 10	18	197	*											
		31	r. 12	24	198	*				CA/50							
	7-S/50										26					25	233
		26	7,5					232			34					25	234
											35					25	235
											36					25	236
											38					25	237






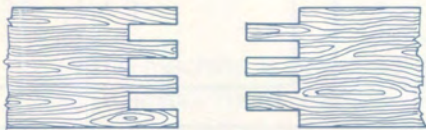
Some examples of shapes you can cut with the solid wing cutters in the Type A tool set.

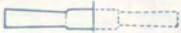
Art. 426

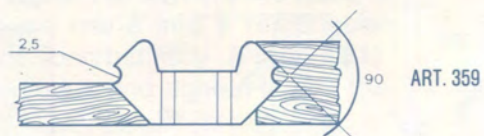
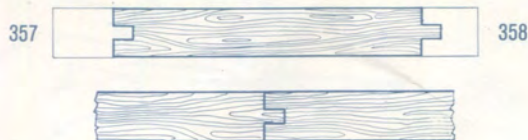


Set of spindle moulder cutters for MIA 6 o (ZC21/S) - TYPE A  
 Art. 356-357-358-359-360-361-362-363-364-365-367-368  
 - 3 Art. 366; 1 Art. 355; 1 single head wrench 17 mm; 1 Al len key 51

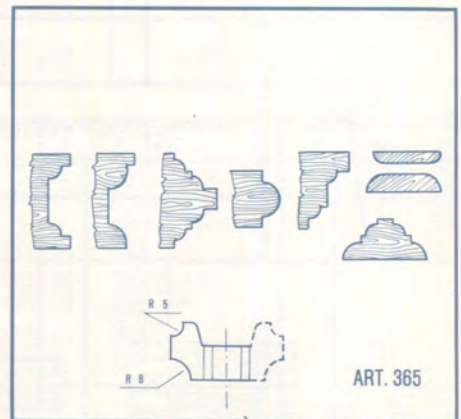
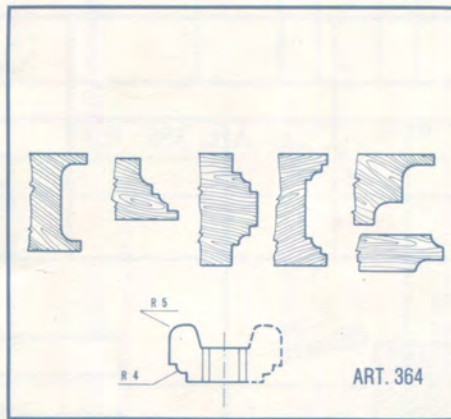
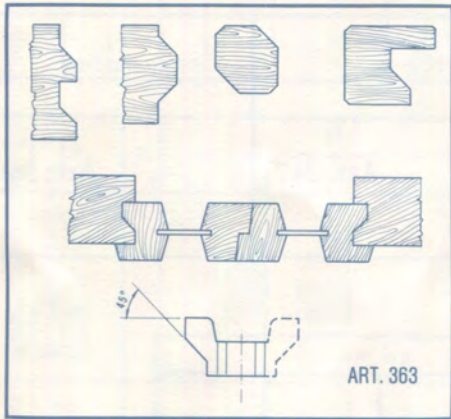
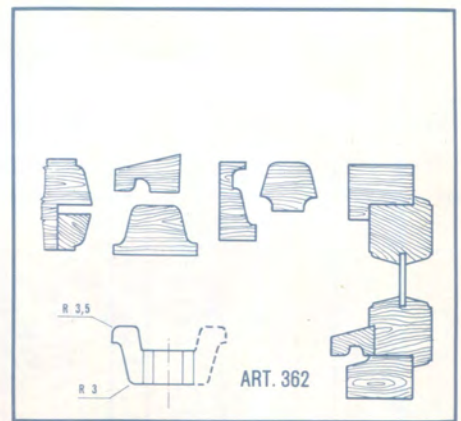
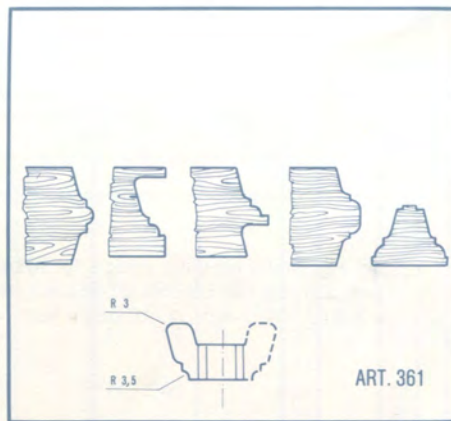
	Cutter spindle with spacer rings art. 367-368	<b>Art. 355</b>	Spacer ring  <b>Art. 367</b>	Top spacer ring  <b>Art. 368</b>
---	---	-----------------	--	--



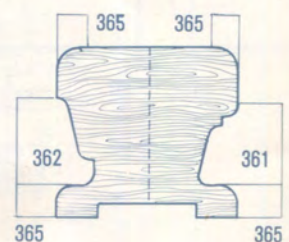
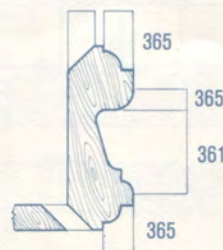
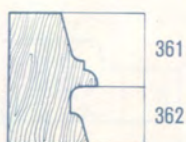
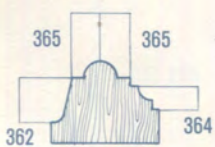
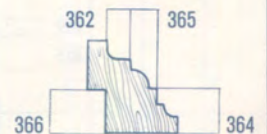
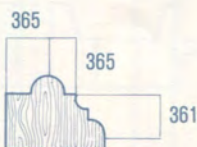
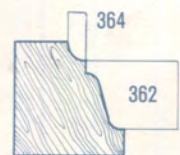
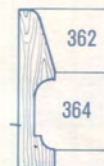
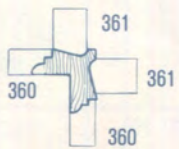
Art. 366	
	Set of 3 cutters + art. 367







Some examples of shapes that can be obtained by making cuts with several different wing cutters on the same piece of stock.





# Borer-mortiser

Select this operation by pulling the selector lever slightly out and shifting it to the position shown in **Figure 48**.

**THE MOTOR MUST BE TURNED OFF AND THE TOOLS MUST HAVE STOPPED ROTATING**

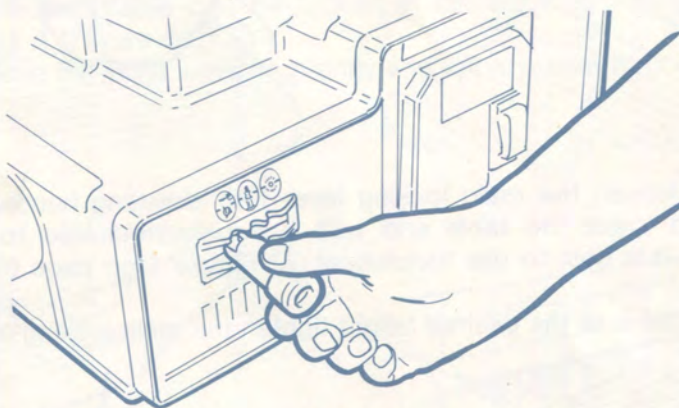


Fig. 48

The machine is delivered with the mortiser handles disassembled. To install them, remove the retaining rings and washers and mount the handles as shown in **Figures 49-50**, then replace the retaining rings and washers.

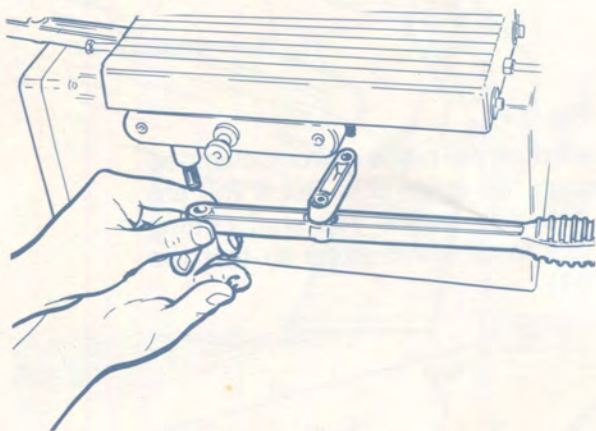


Fig. 49

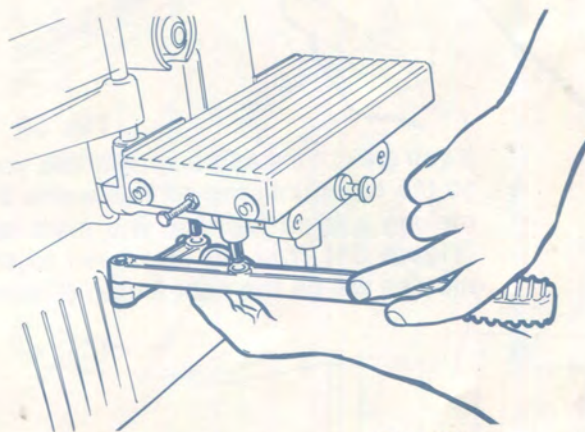


Fig. 50

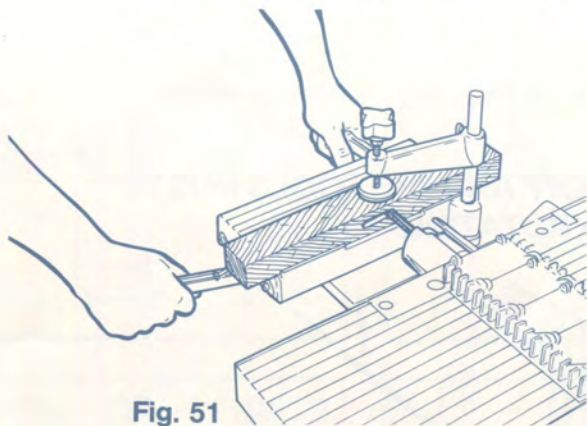
The borer-mortiser is basically a horizontal drill which is used to cut holes and mortises for joints.

The workpiece is clamped to the table (use the crosscutting table hold-down device) which travels longitudinally and crosswise on two pairs of ground rods. When the special bits which cut out the corners are used, a mortise (a series of adjoining holes which cut out the corners are used, a mortise opening) can be cut by feeding the work longitudinally (**Figure 51**). The bits rotate clockwise; place them in the chuck and tighten it with the key provided with the machine (**Figure 52**).

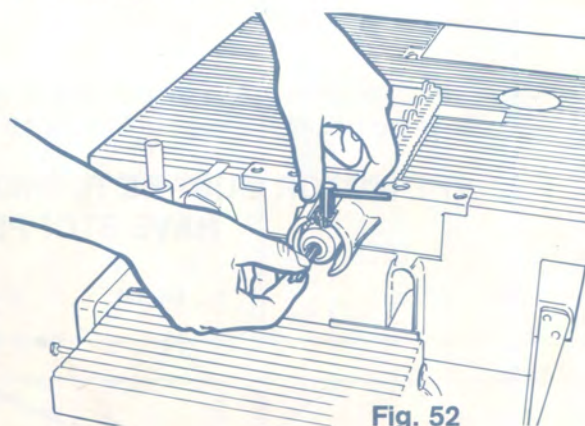
Since the borer chuck is mounted on the planer spindle, the guard must be mounted on the planer before you start work.



Make sure that the spindle moulder control knob (**Figure 53**) is in the OFF position before adjusting the height of the mortiser table.



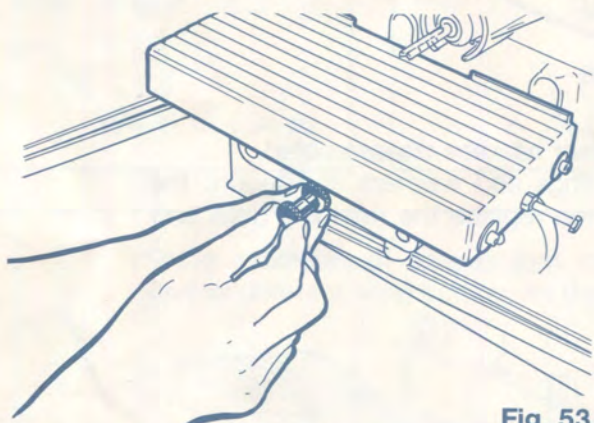
**Fig. 51**



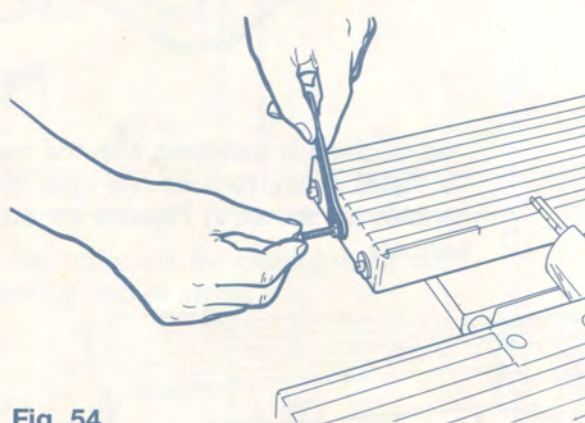
**Fig. 52**

Be sure to loosen the main locking lever turn elevating handwheel (B) clockwise to lower the table and turn it counterclockwise to raise it (**Figure 54**). It is best to use handwheel (A) **Figure 1** on page 6) for fine adjustments.

When the table is at the desired height tighten the main locking lever.

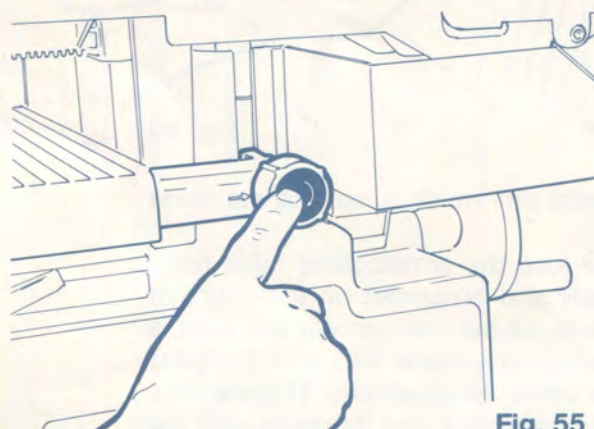


**Fig. 53**

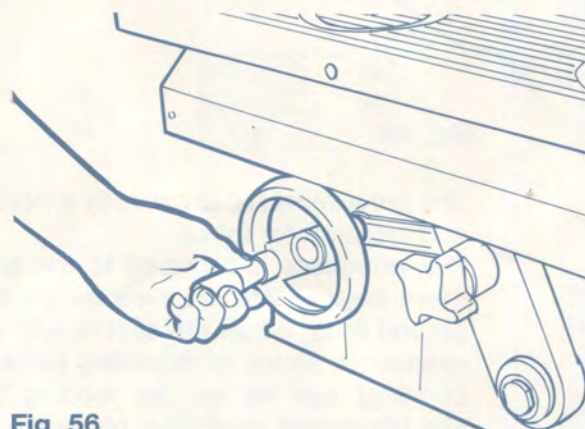


**Fig. 54**

If you are cutting a through mortise, you will push the piece of wood clamped to the table until the bit has come through the other side. But if you are making a blind mortise, you must set the stop before you start cutting (**Figure 55**). You will also have to set the longitudinal stops so that the mortise will be the right length (**Figure 56**).



**Fig. 55**



**Fig. 56**

**CAUTION!** When you have finished using the mortiser and the bit has been removed from the chuck, move the mortiser table all the way out so that it will not hit the spindle when other tools are being raised.



# Crosscutting table

In the separate package you will find the miter fence, the holddown device and the adjustable stop which should be mounted as shown in **Figures 57-58**. The adjustable stop is used to cut several pieces of stock of the same length (**Figure 59**). As you can see, the miter fence and hold-down device (the same one used with the borer) can be mounted in two different positions: one for the circular saw (**Figure 62**) and one for the spindle moulder (**Figure 61**).

The crosscutting table can be locked in place by tightening the knob underneath it (**Figure 60**).

**NOTE:** Clean the table ways frequently and apply a coat of good oil.

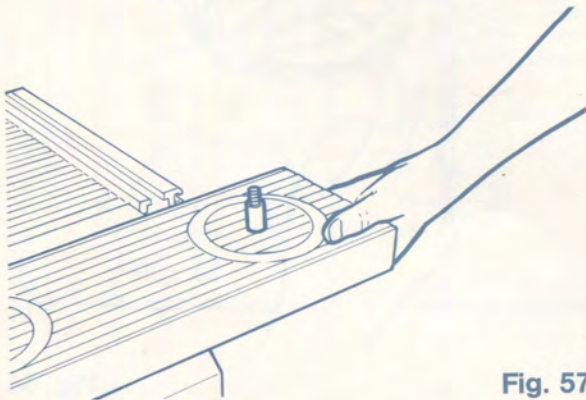


Fig. 57

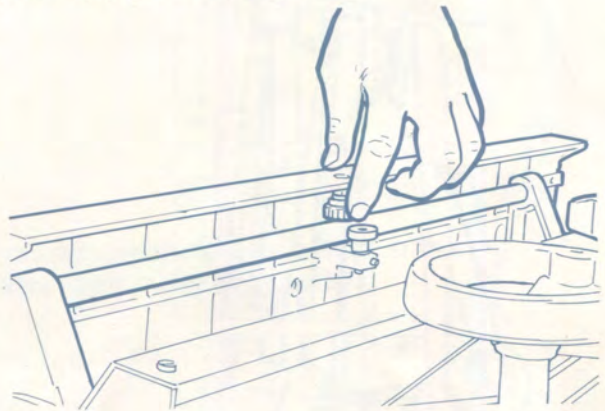


Fig. 60

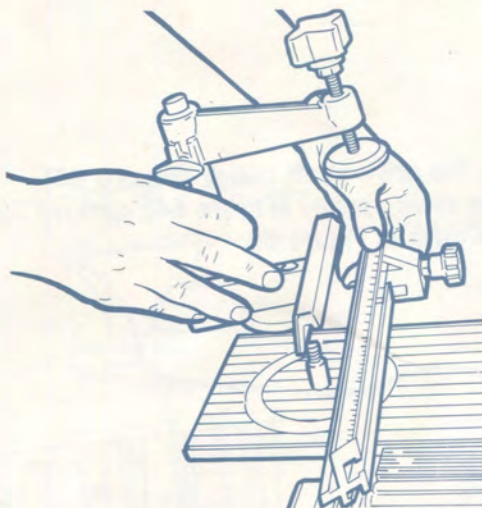


Fig. 58

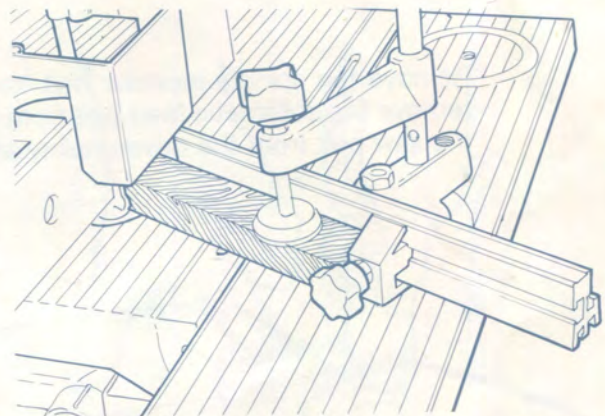


Fig. 61

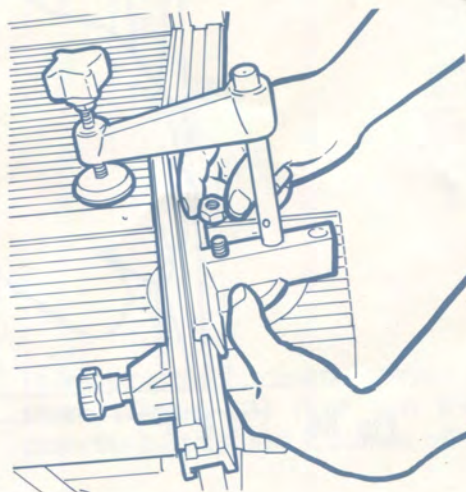


Fig. 59

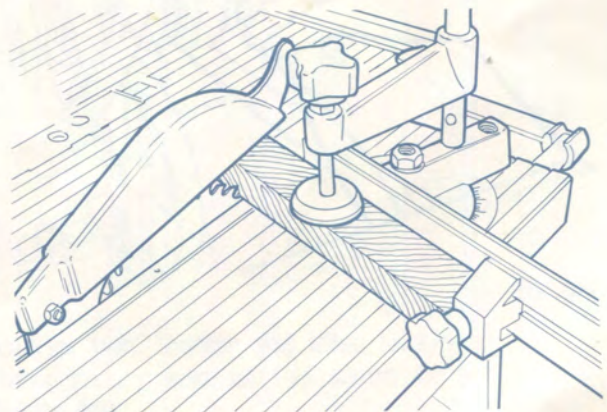


Fig. 62



# Belt replacement

First turn the machine upside down.

From left to right the drive belts are: spindle moulder, moulder horizontal belt, saw, planer and automatic feed.

The belts are marked on the inside as follows: spindle moulder T - saw S - planer P - automatic feed A - spindle moulder horizontal belt R (**Figure 63**).

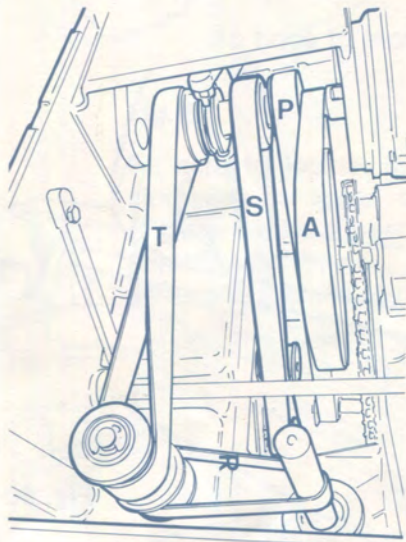


Fig. 63

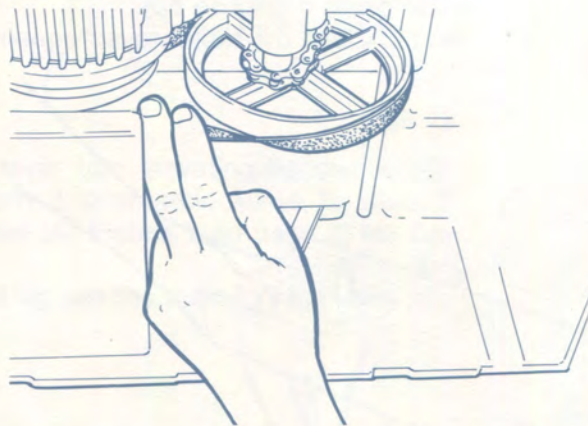


Fig. 64

Remove the spindle moulder belt from the drive shaft pulley (**Figure 65**), remove the automatic feed belt from the driven pulley (**Figure 64**), remove the saw belt from the driven pulley as shown in Figure 66.

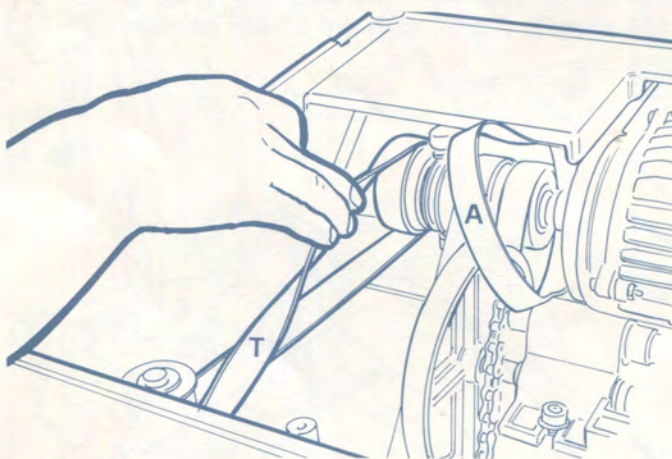


Fig. 65



Fig. 66



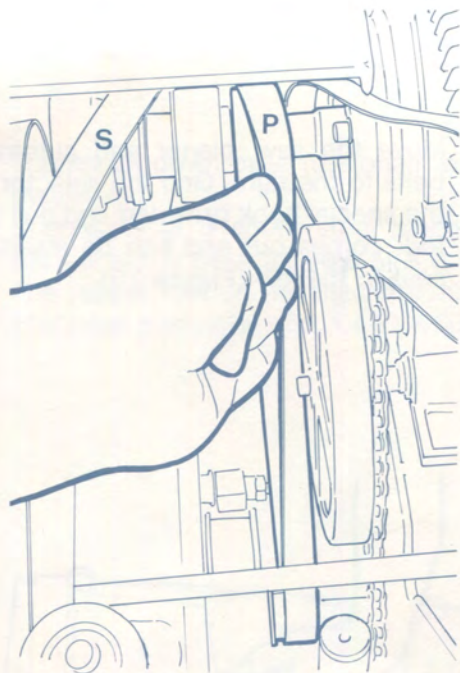


Fig. 67

And remove the planer belt from the drive shaft pulley (**Figure 67**).

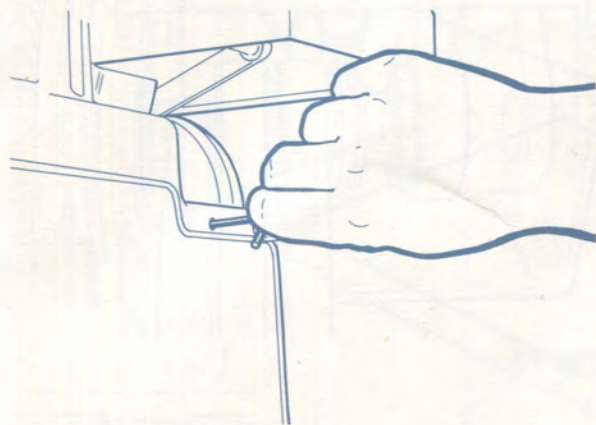


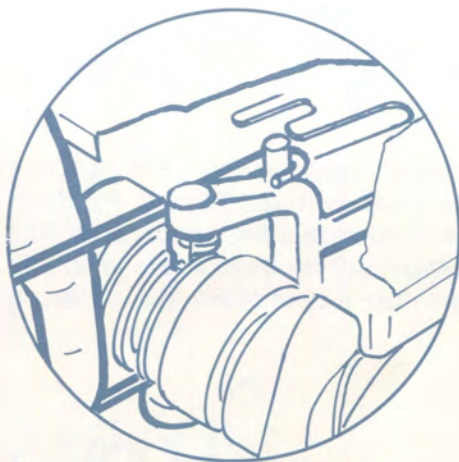
Fig. 68



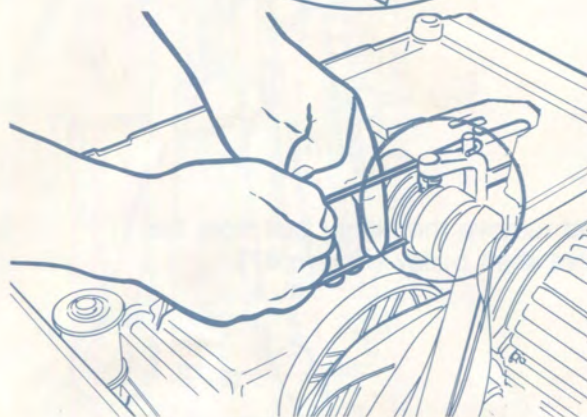
Fig. 69

To replace the horizontal spindle moulder belt, loosen the idles locking screw (**Figure 68**). Now turn the idler pulley and at the same time push the belt up until it comes off (**Figure 69**).





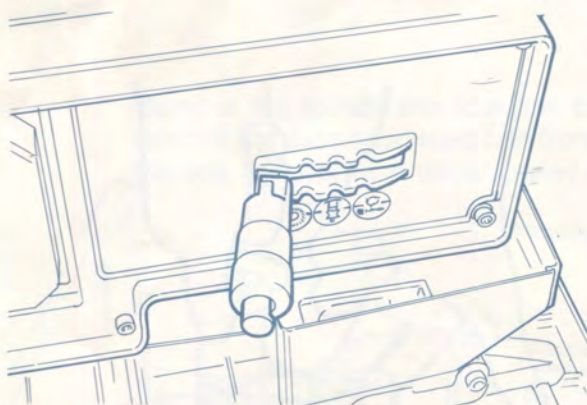
Move the saw, planer and automatic feed belts to the right. Grip the selector fork with the special hook provided and pull it until the fork comes out and can be inserted in the seat to the left (**Figure 70**).



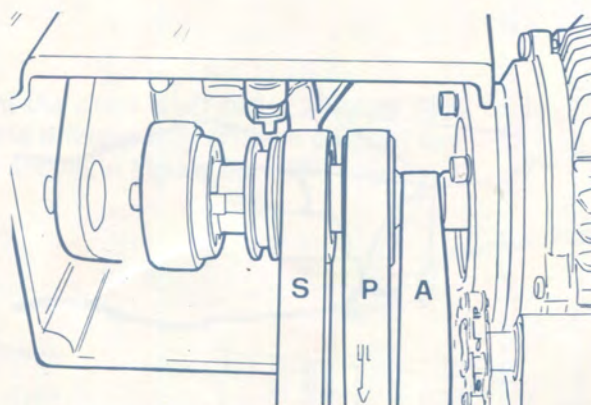
**Fig. 70**



**Fig. 71**



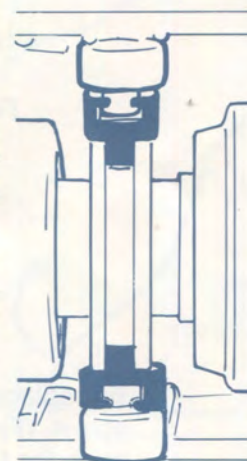
**Fig. 72**



**Fig. 73**

The selector lever must be moved in the opposite direction (to the right) at the same time (**Figures 71-72**). Now all the drive belts can be slid off the drive shaft. Replace them and repeat the operations described above in the opposite order to reassemble the unit.

**CAUTION!** After the automatic feed, planer and saw drive belts have been replaced (**Figure 73**) remount the selector fork: make sure that the black plastic pins are installed in the spacer groove with the opening pointing up as shown in **Figure 74**.



**Fig. 74**



# Base

The knock-down base (optional) will be packed in the same carton as the machine.

It consists of 5 sheet steel pieces 1.2 mm thick which fit together to form a sturdy base for your MIA 6 (**Figure 75**).

The rubber feet on the machine must be placed in the holes on the base. The base measures 450 × 450 × 500 mm and weighs 10 kg.

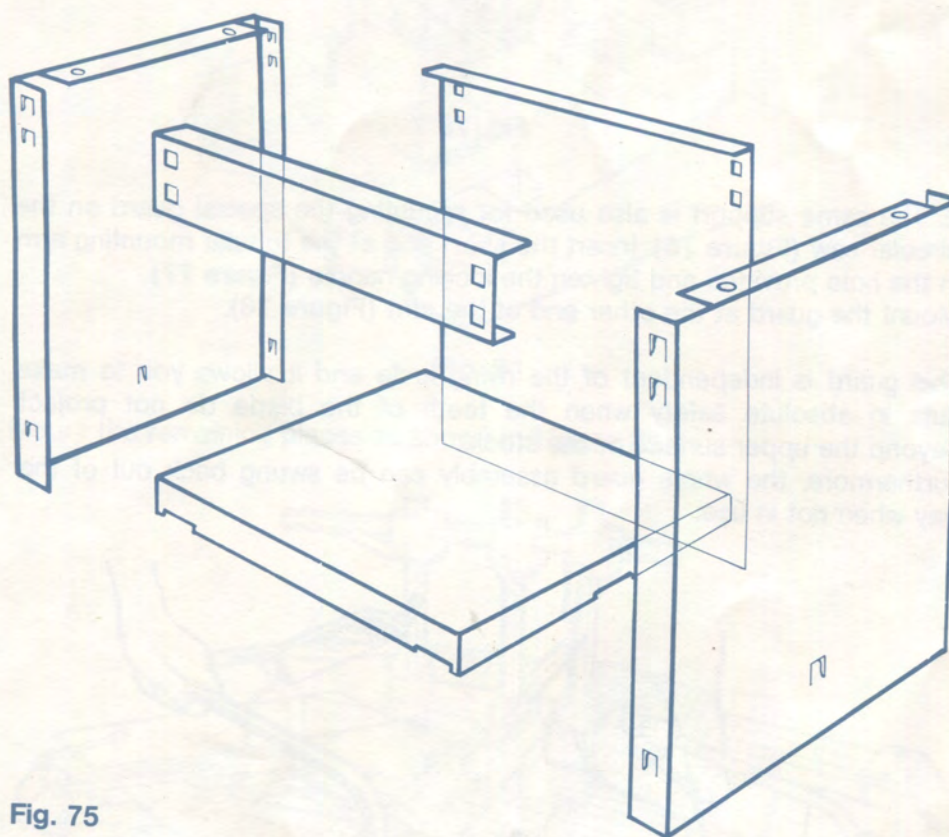


Fig. 75



## Special guards (optional)

As you know, Zinken Italiana supplies special guards which offer maximum safety; they have been designed to be used with the machine without getting in the way at all.

They should be mounted as follows:

1. For the special guard on the surfacing planer, just screw the support onto the side of the table (**Figure 76**). This guard can be moved both horizontally and vertically and you can swing it back out of the way when it is not needed.

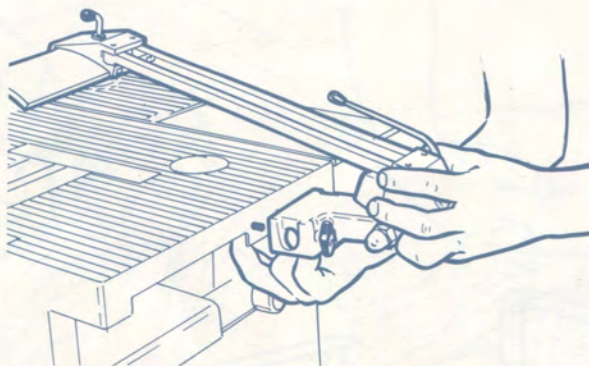


Fig. 76

2. The same support is also used for mounting the special guard on the circular saw (**Figure 76**). Insert the short end of the tubular mounting arm in the hole provided and tighten the locking handle (**Figure 77**). Mount the guard at the other end of the arm (**Figure 78**).

This guard is independent of the riving knife and it allows you to make cuts in absolute safety when the teeth of the blade do not project beyond the upper surface of the stock.

Furthermore, the whole guard assembly can be swung back out of the way when not in use.

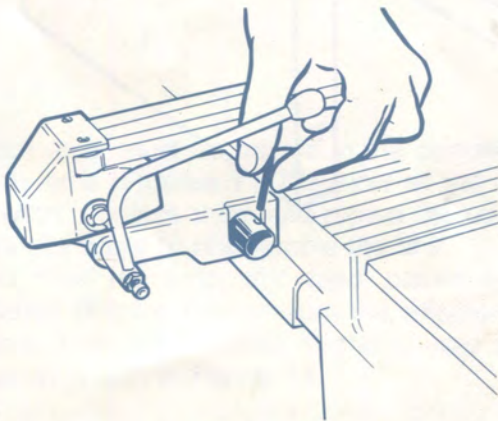


Fig. 77

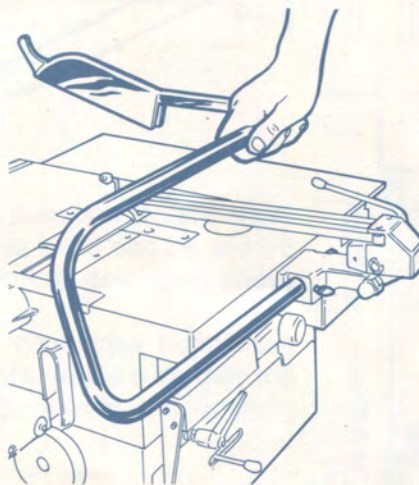
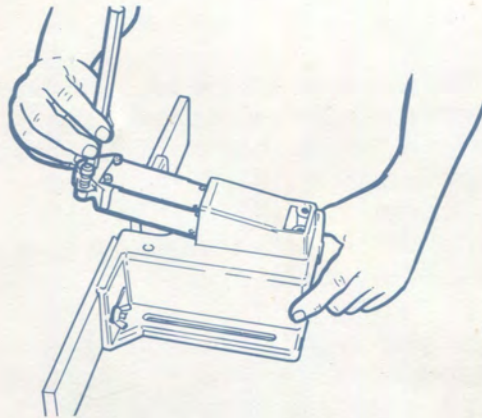


Fig. 78

\$30 each

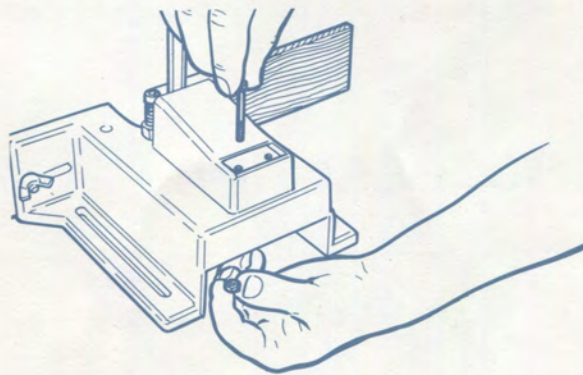


If you purchased your machine with the normal spindle moulder guard and have decided to mount a Shaw guard on this unit, follow this procedure: insert the steel base (with hexagonal rod) on the red guard as shown in **Figure 79**.



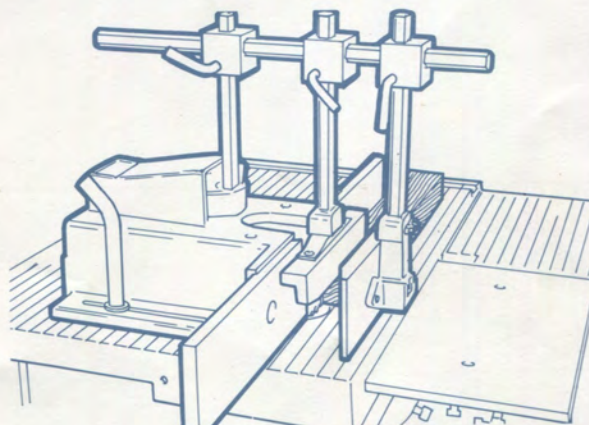
**Fig. 79**

Lock it in place by means of the screws provided (**Figure 80**).



**Fig. 80**

Mount the remaining pieces as shown in **Figure 81**.



**Fig. 81**

Besides preventing the operator's hands from touching the tool, the Shaw guard is perfect for cutting small parts because the horizontal and vertical pressure units automatically press the part against the cutter (**Figure 81**).



# Some advice and maintenance tips


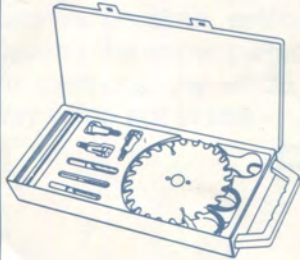
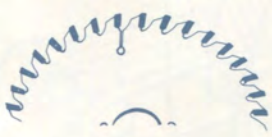


When your machine is new, one of the tools which you are not using may rotate slowly together with the one being used. This phenomenon is quite normal: the sealed, prelubricated bearings have to be run in. This problem will gradually disappear in a short time.

**CAUTION:** When raising or lowering the various tools and tables be careful not to turn the handwheel too far.

Thanks to the technological and construction characteristics of your MIA 6 and to the special sealed ball bearings, no special maintenance is needed. Just make sure you clean your machine after you have finished using it. Clean the saw and spindle moulder control knobs and under the thicknessing planer table carefully.

If your machine is going to remain idle for a long time or if it is kept in a damp room, protect all the steel parts with a thin film of antioxidant. Check the drive belts because they can be damaged by dampness.

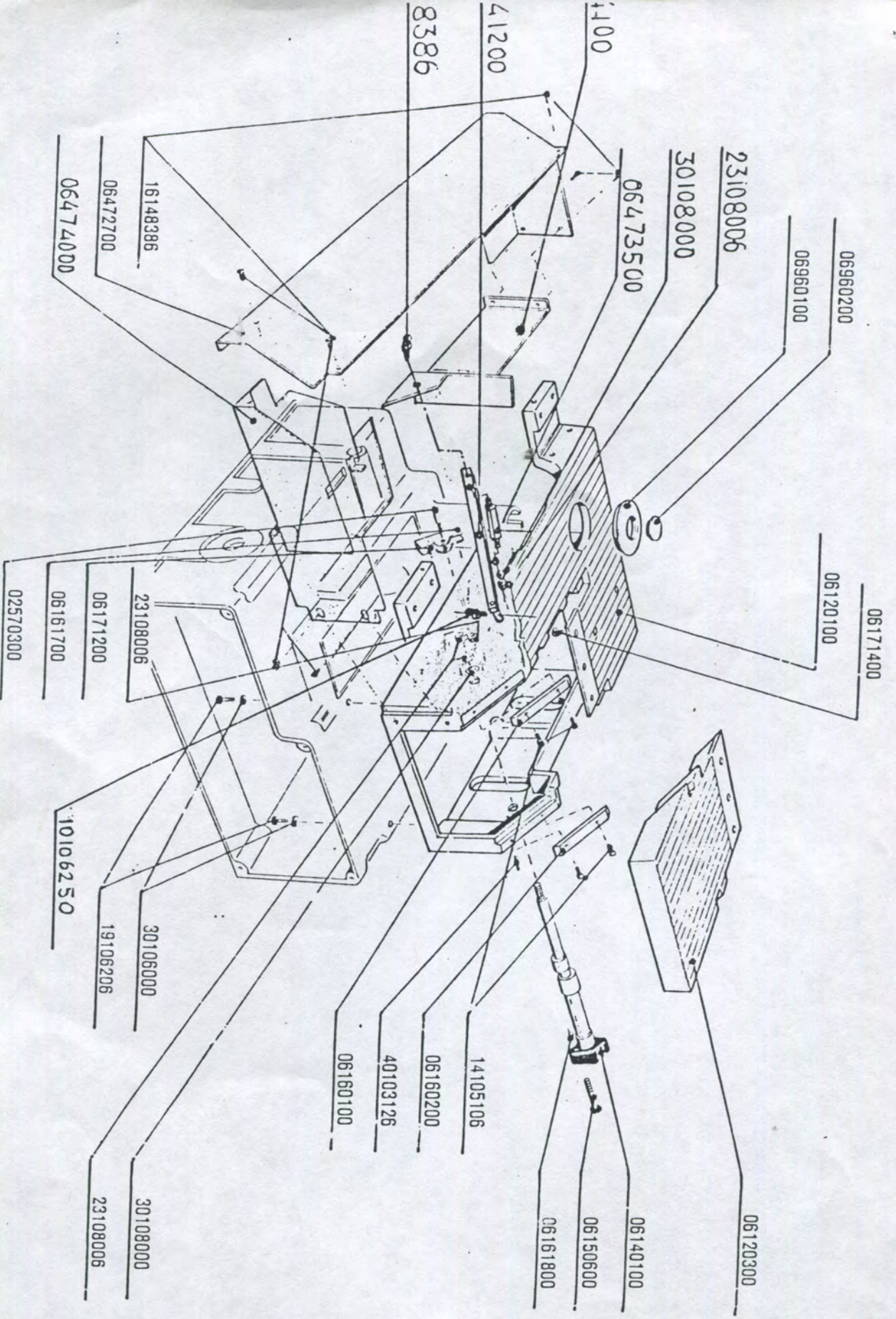
## Other accessories

	Connections for female threaded shank cutter 12×1	Art. 394 - "MIA 6"
	Set of tools and spares for MIA 6 TYPE B Art. 390-393-394-400-408-409-410; 1 set of belts (5 pieces); 1 pair of planer knives; 1 single head wrench 17 mm	Art. 427
	Saw blades TCT hole 20 mm Ø 160 mm	Art. 400 Z = 24
		Art. 401 Z = 36
	Planer knife TC (integral)	Art. 403
	Mortasing bits HSS	Art. 408 Ø 6 mm. . . . Art. 409 Ø 8 mm. . . . Art. 410 Ø 10 mm. . . .

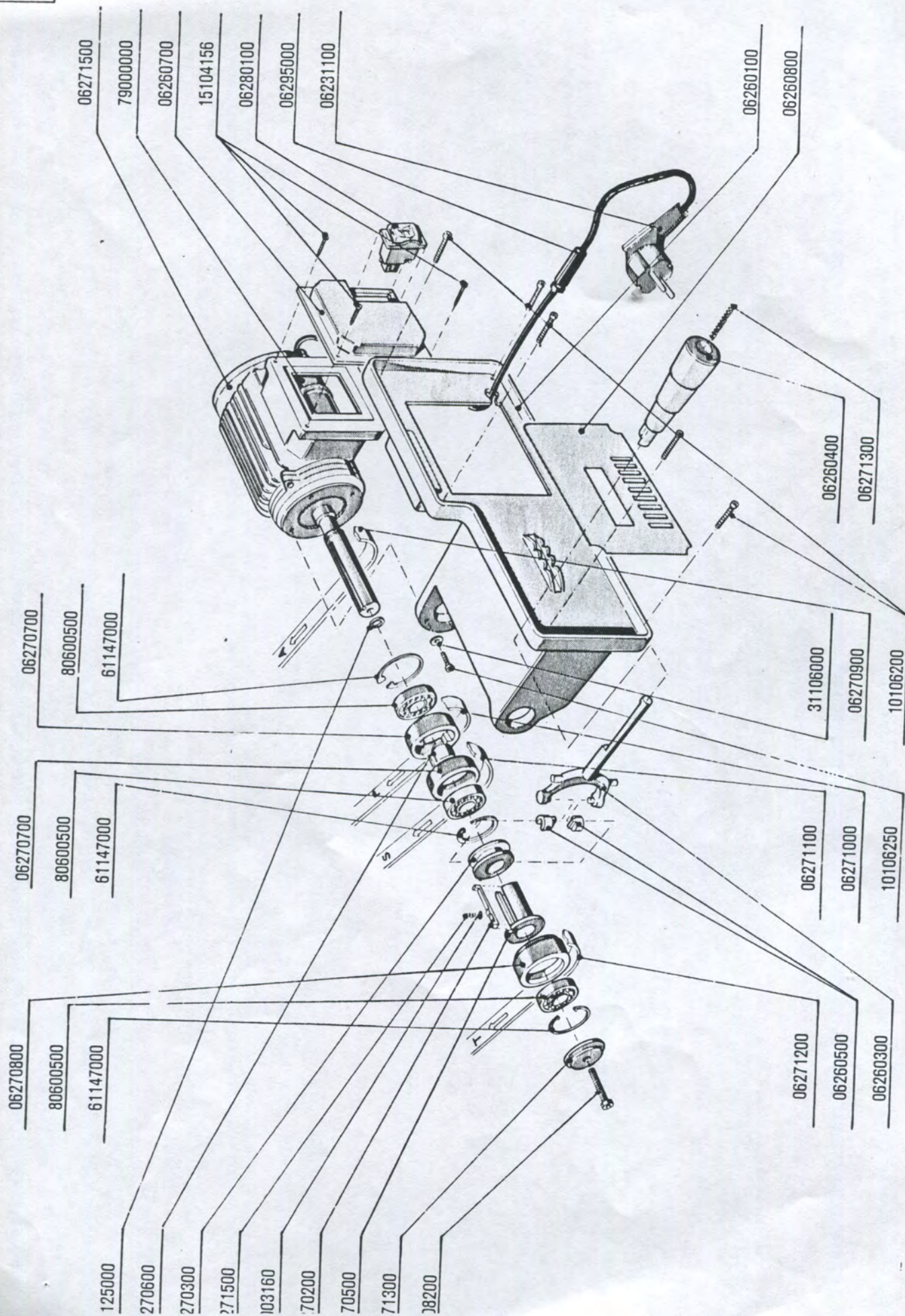


Blank Page Without Content

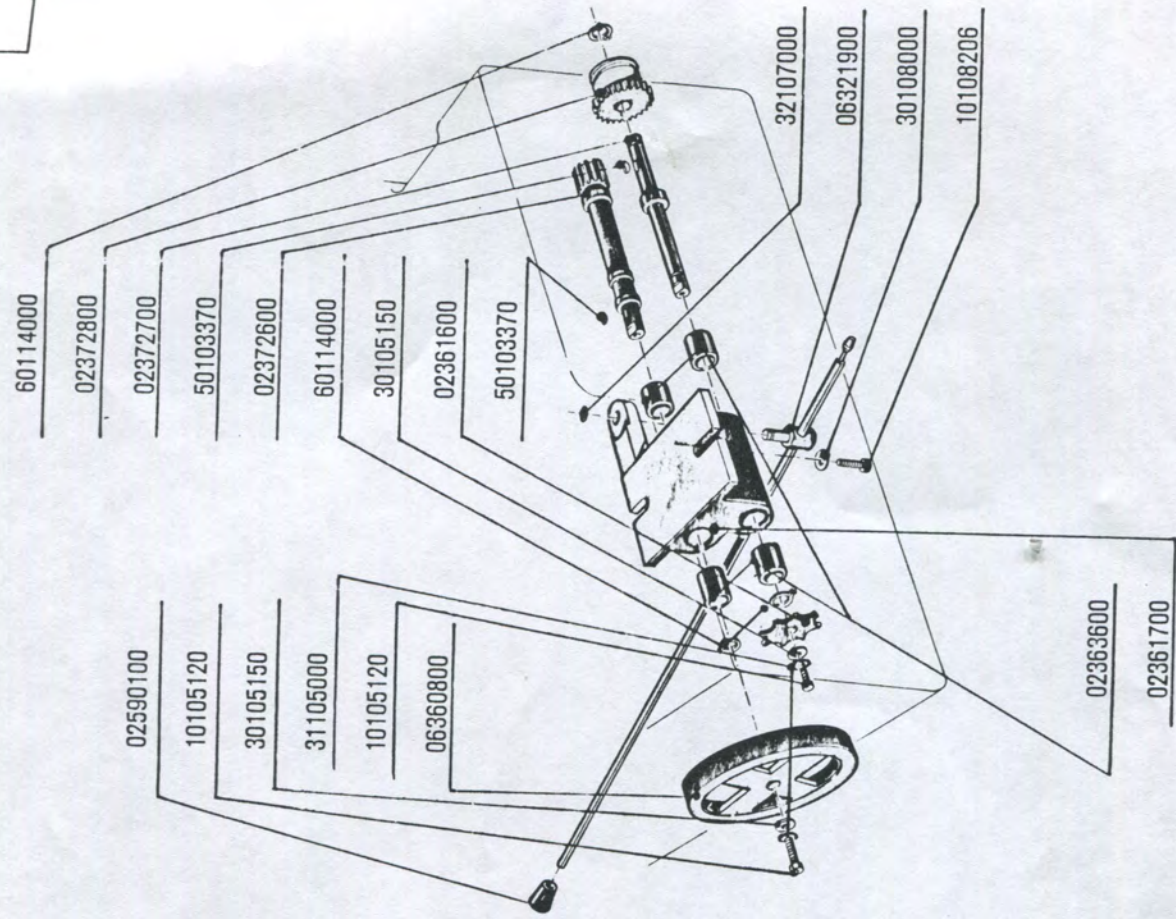
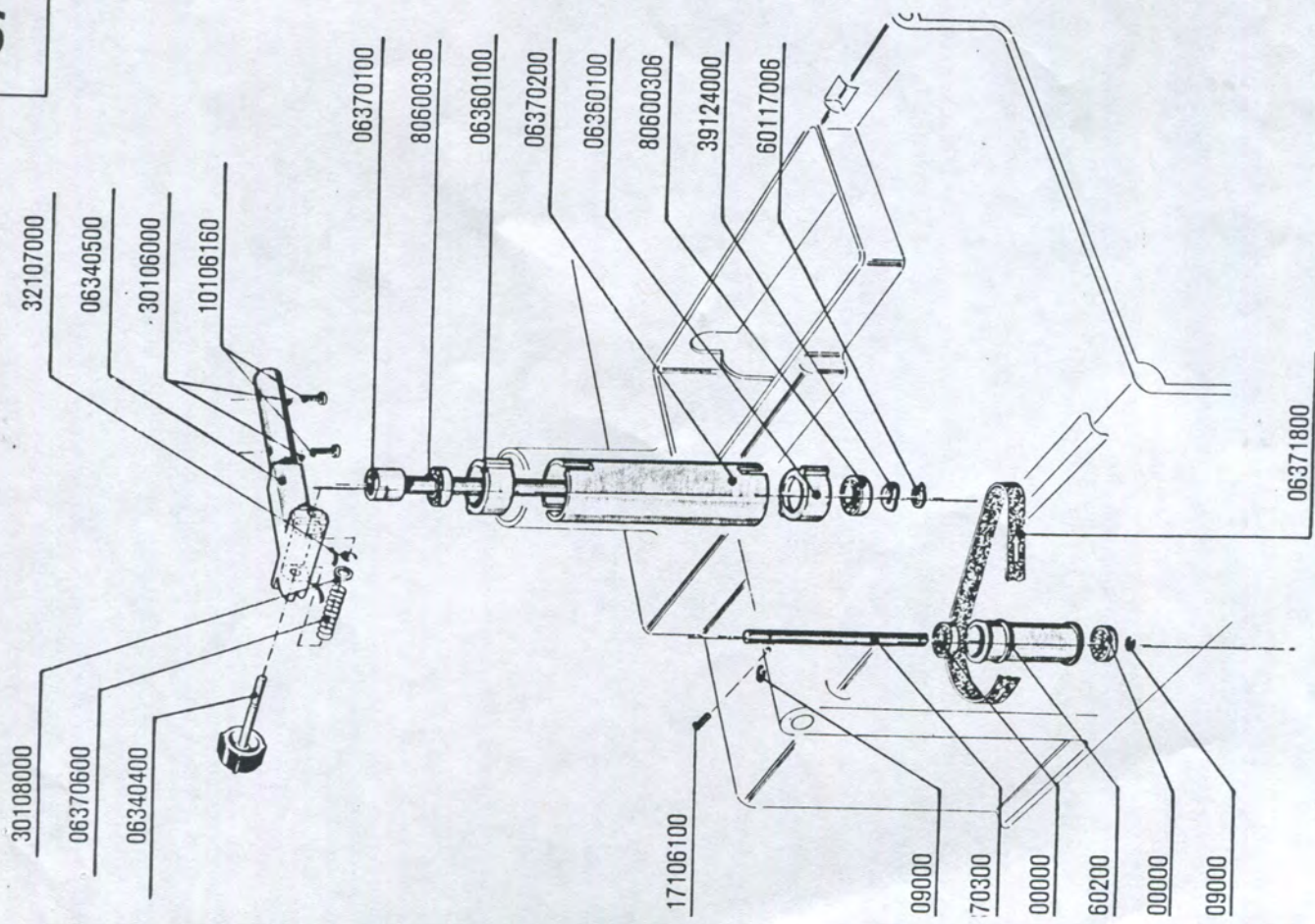




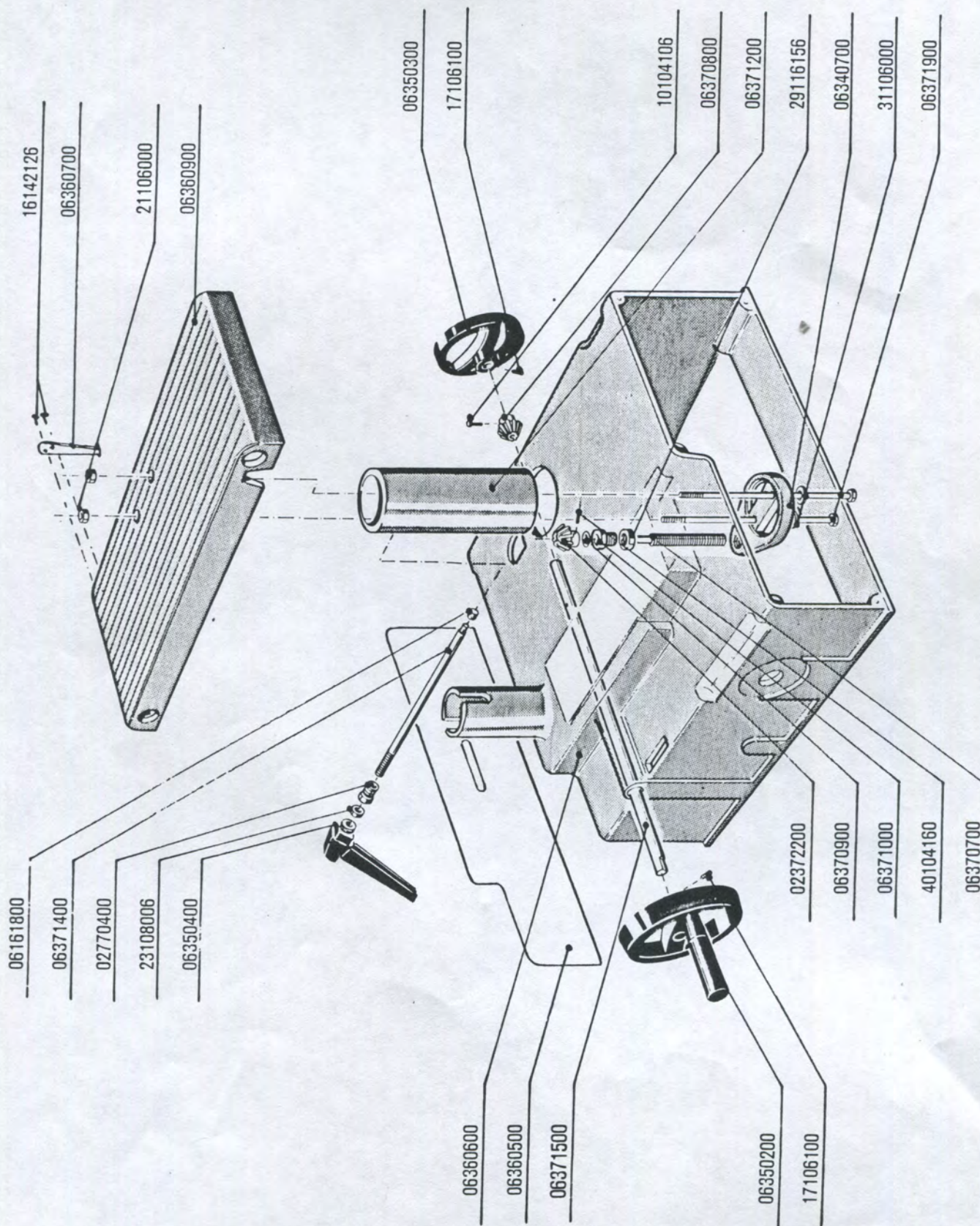




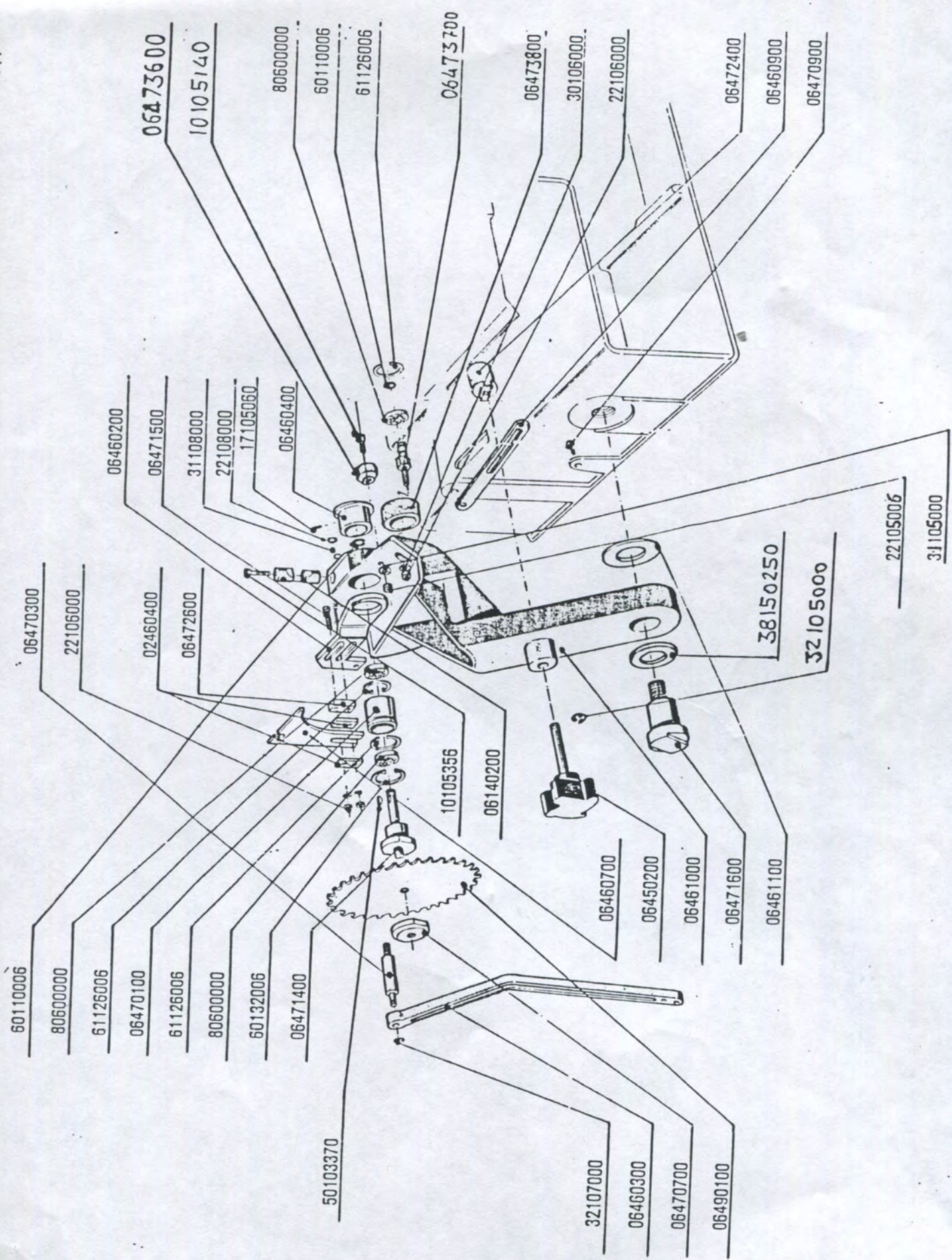




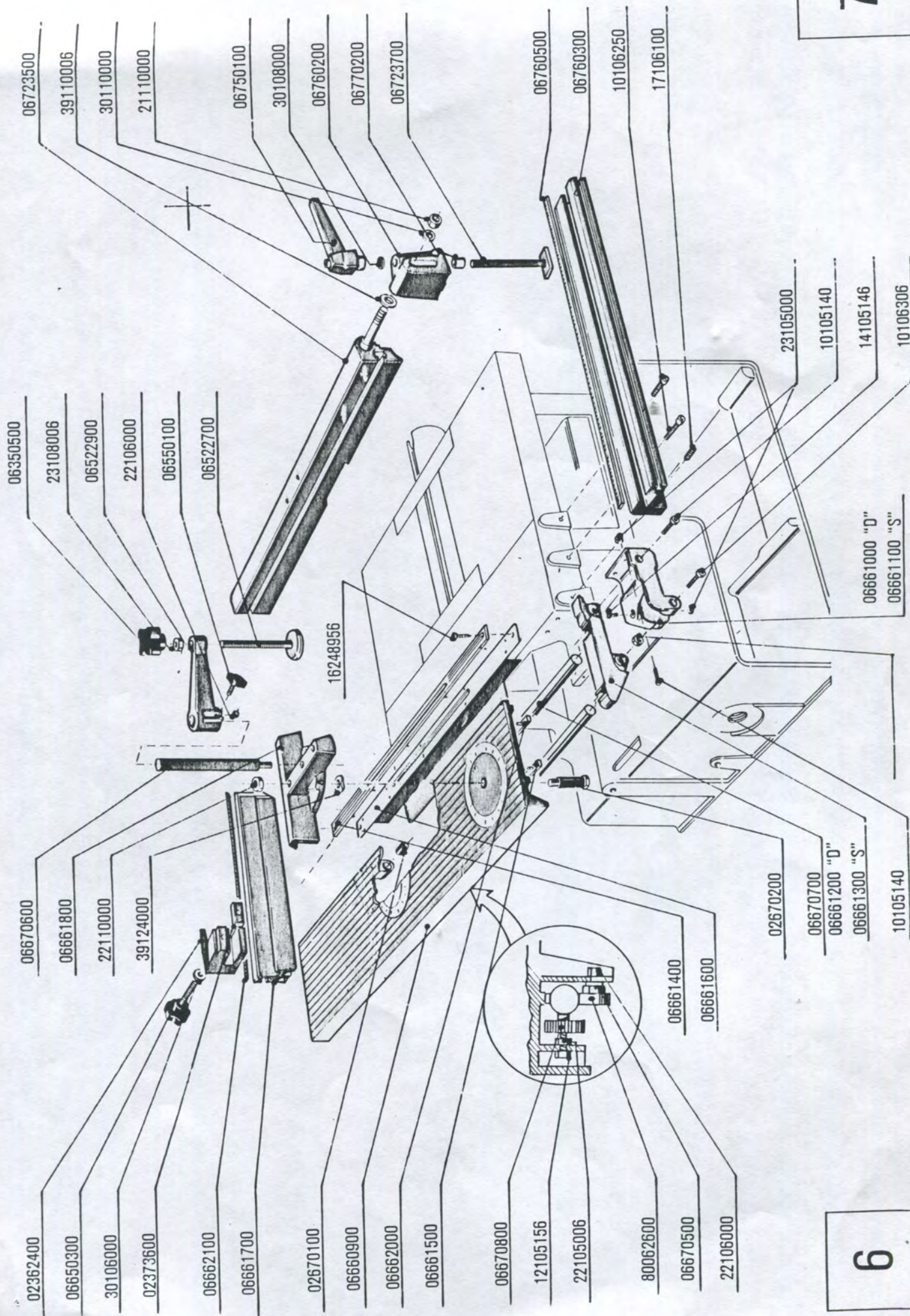




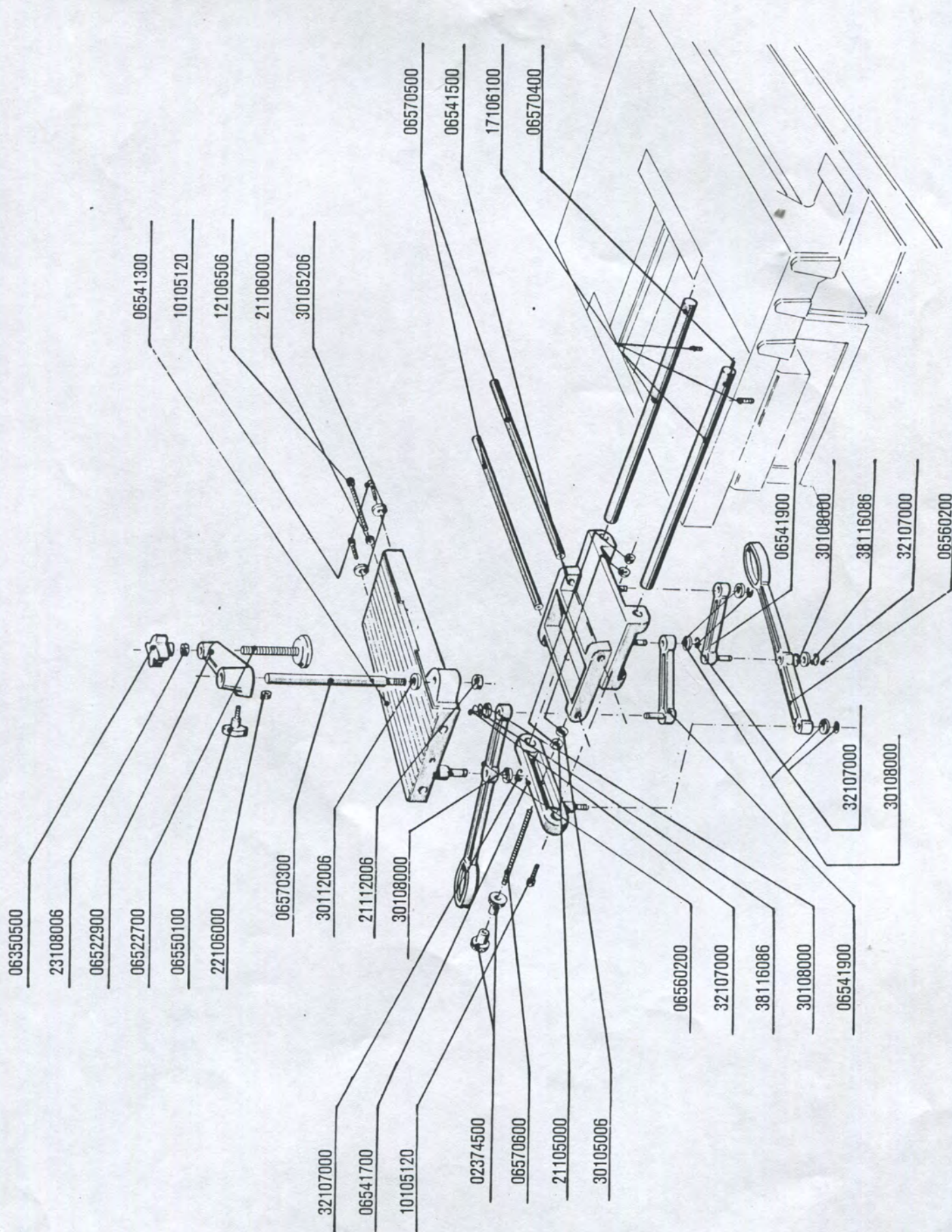




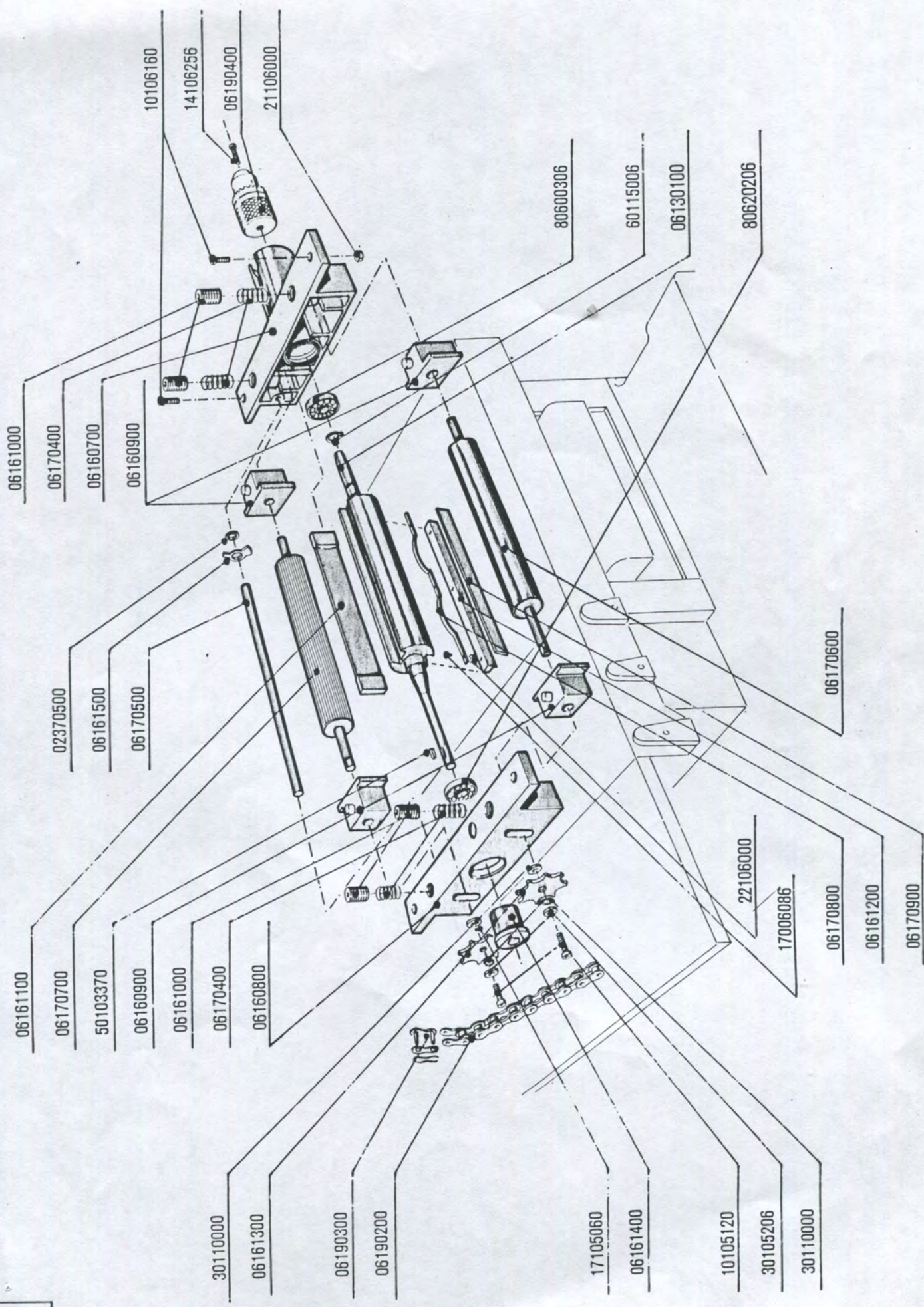




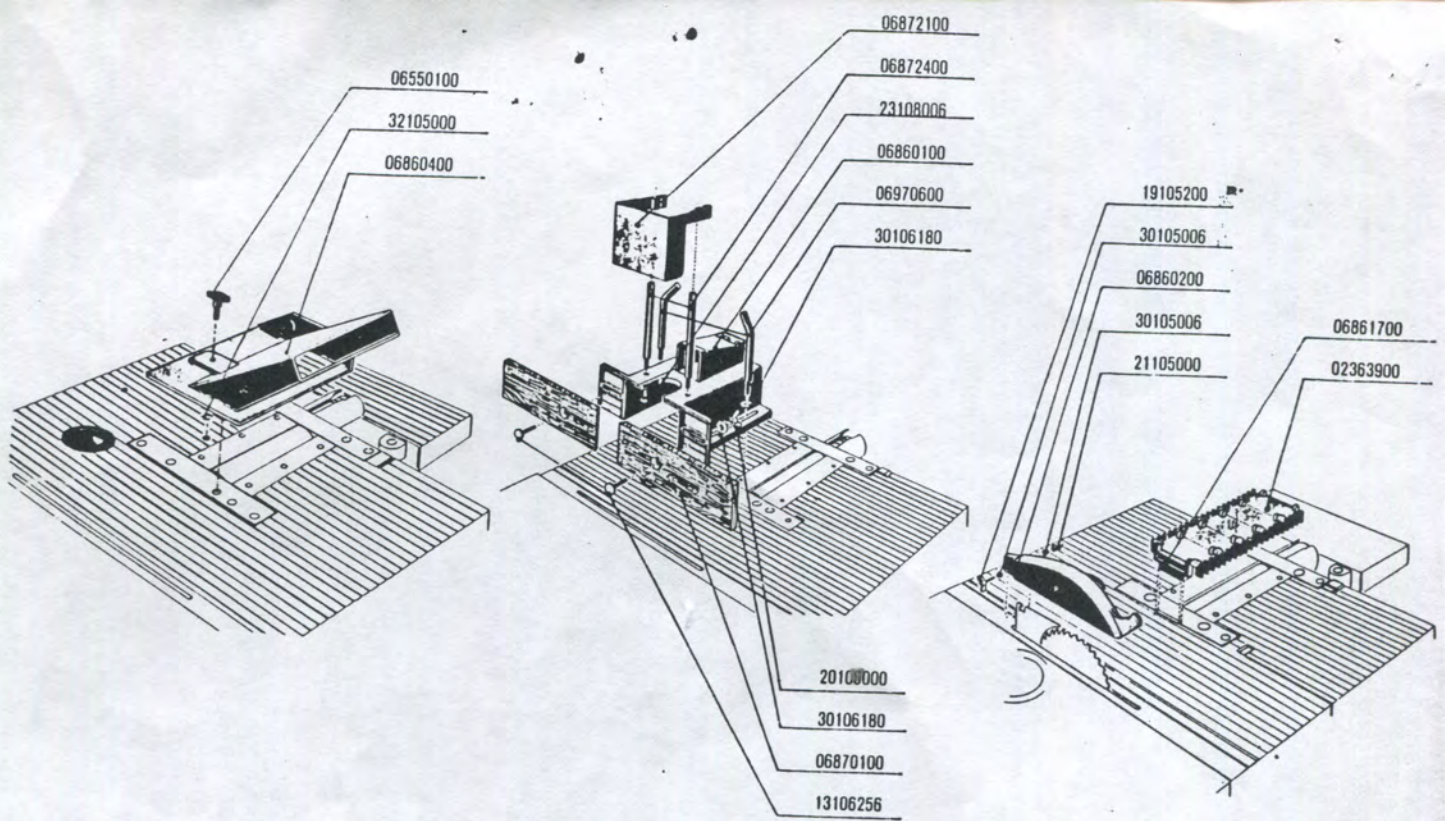




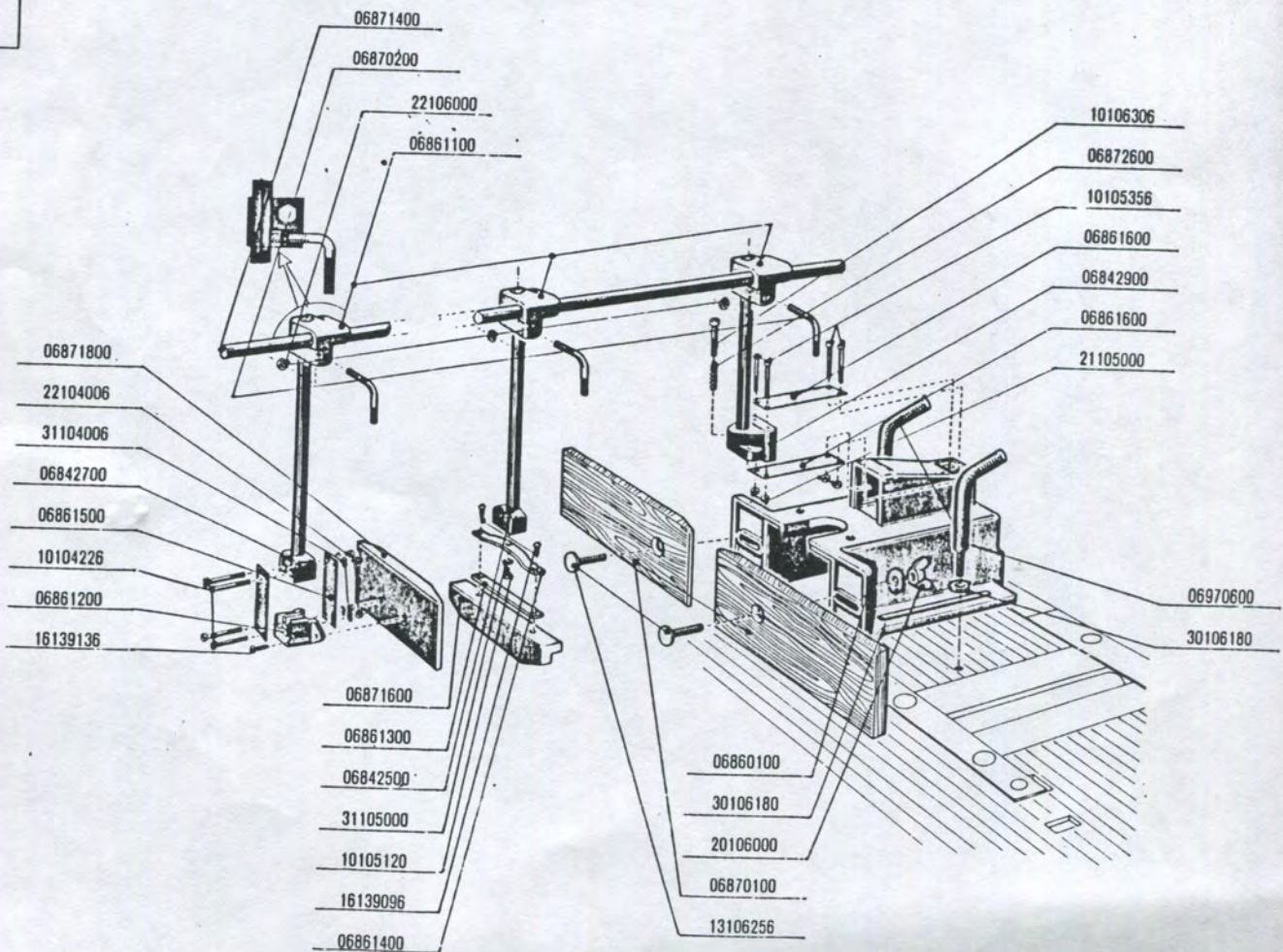








8/4





**ZINKEN ITALIANA S.p.A.**

Via Buonarroti, 50/56

Tel. 44.56.651 (aut. 4 linee) - Telex N. 311478

**20090 TREZZANO S.N. (Milano) Italy**